# The Commercial Car Journal

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# "Sell the Motor Truck RIGHT!"

Says Graham

An Interview That is Well Worth Reading by All Motor Truck Manufacturers and Dealers. Facts Which the Industry Cannot Side-step

By A. V. COMINGS

STANDING on the threshold of what promises to be a notable period in the development of merchandising methods in the commercial car industry, it is well for both manufacturer and dealer to pause, make inventory of his present methods, search out his weaknesses, take cognizance of his strength, that each may chart his future course along safe ways, by roads over which this great industry may move into a fulfillment of its splendid destiny.

The past few years in the commercial car industry have been years of tremendous achievement. The courageous beginnings of earlier years have expanded into great manufacturing enterprises and there have been added to these many new factories, each eager to take its place in helping to furnish the nation with efficient highway transportation.

#### Industry Again on Firm Footing

An infant that has grown as rapidly as has this motor truck industry is sure to have growing pains. But they are the pains that come to any healthy, lusty infant that grows a little faster than nature intended and they are not dangerous. The industry is just recovering from one of these spells now and it seems to be the consensus of opinion that it is now about to launch out on a period of steady, conservative growth that may not be as spectacular, but that will be far less painful in the long run.

Of the factors that will be vital to the success of the industry in the next decade no one is better qualified to speak than George M. Graham, vice-president of the Pierce-Arrow Motor Car Co., and member of the Motor Truck Committee of the N. A. C. C.

Since the beginning of the war Mr. Graham has been considered the foremost spokesman of the industry. He served throughout the war as the representative of the motor truck manufacturers at Washington and rendered invaluable service to the government in this capacity as well as to industry at large.

After the armistice had been signed and the industry was groping around to find its way out of the maze of war-

time chaos, it was Mr. Graham who sounded a clarion note of faith in the future, on the occasion of the convention of the Ohio Automotive Trade Association in the month following the armistice. Again

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and again he was the speaker who roused the industry to a realization of what lay before it and he, more than any other man, helped the industry to get into the swing that made its growth in two years the wonder of other business lines.

Not alone in the industry has his work been done. He has done much to give men in other walks of business life a proper conception of the motor truck's place in the general transportation scheme and his efforts have had wide influence in shaping the trend of thought toward a much friendlier vein.

He made a masterly address before the Chamber of Commerce of the United States at Atlantic City last April. Again, in October, he showed the members of the American Electric Railways Association that the motor truck is not a competitor in handling passenger traffic, but an ally and that its only competition with the electric railways is in handling freight, an economic development which the interurban electric railways would be foolish to attempt to stem.

Commercial Car Journal feels that Mr.

Graham's opinions on various phases of the industry today are well worth while and to this end presents this interview. A careful reading of the interview cannot fail of benefit to manufacturer or dealer, as Mr. Graham presents some truths that the industry may well heed.

In answer to a question as to what is the greatest thing motor truck manufacturers can do to build their business on permanent, constructive lines during the next few years, Mr. Graham said:

"In my judgment the greatest thing the manufacturer can do in order to place his business on a basis of permanent achievement is to establish its place in the great transportation fabric.

#### As Important as Other Mediums of Transport

"I think that it is from our failure to achieve this result that most of our difficulties spring. There would not, for instance, be such a tendency to legislation against motor trucks if, as manufacturers, we had been successful in driving home the great truth that they now share with steam railways, inland and steamships, urban and suburban electric railways, the great obligation of moving this country's merchandise. Financiers would be less hesitant to extend credit if they had fully gripped this big thought.

"In our zeal to sell our own product we have perhaps not fully recognized the rights and potentialities of the other mediums of transportation.

"We should constantly teach the great truth that the interests of transportation are common, not opposed. We should assist in all movements to secure to the railroads proper rates of compensation and equitable treatment under state and national laws. We should rally to the aid of electric trolley companies when there is any tendency to do them injustice, for it should be recognized that they bear a dominant place in urban transportation.

"We should be advocates of properly developed systems of inland waterways.

"When we have shown a broad-minded interest in all kinds of transportation we shall have no difficulty in winning the consideration, confidence and co-operation of business men generally. This will mean sales, for it is business men who buy trucks and as business men are investors in all kinds of securities, they will be attracted to an industry which is broadminded enough to wish to do justice to all merchants of transportation."

Complimentary to the question as to what the manufacturers may do to better the industry in a broad way, I asked Mr. Graham what, in his opinion, is the greatest thing the dealers can do to build their part of the business on more permanent, constructive lines during the next few years. His answer was:

"The most constructive thing the dealer can do is to sell his trucks right, even though in the process he has to accept a lesser volume of business.

"Into this phase of the subject enters very closely our relations with the financier. The banker is eager to lend money,

for only through interest on money so lent can he achieve profits, but as he is a custodian of trust funds he has a right to lend only where the risk is safe.

"He does well to decline credits to the dealer who cuts prices, who makes excessive allowances on trucks taken in trades and who gives long terms on shadowy securities. The dealer who follows these practices discredits the whole industry. This applies equally to the manufacturer who condones methods of this kind in his branches.

#### Salesman Cannot Afford Time Necessary for Research Work

"The salesman's present compensation basis of a small drawing account against commissions on sale very naturally drives him to interest himself only in the prospect who offers a chance of immediate result. As a result of this the whole industry scrambles for the few prospects in sight, but ignores greater prospects who could be created by research work.

"The salesman cannot be expected to do this research work at his own expense or on the chance of remote profits in the future. A certain part of his time should be devoted to this work and he should be paid on a fixed basis, determined by his earnings when productively active."

As to the education of dealers to certain policies, by the individual truck manufacturers, and the insistence of the latter that his dealers shall do business according to the policy of the company, Mr. Graham thinks there is plenty of work to be done along this line, and it has been his experience that dealers are eager to respond to this sort of educational work.

Mr. Graham is of the opinion that the right type of motor truck salesmen will not be attracted to the business until the financial inducements are greater than at present. In answer to a question as to his estimate of the average motor truck salesman on the job today, Mr. Graham

"The motor truck salesman is steadily developing, but it will not be possible to get the ideal type of man or to get the best results out of the present men until the basis of remuneration can be improved.

#### What a Salesman Should be

"At the present time, with a few exceptions, the motor truck salesman is underpaid. His work calls for most exacting qualifications. He has to be a salesman with the personality to force a hearing from the foremost executives of great corporations. He has to be sufficiently mechanical to defend his position in technical arguments. He has to be a mathematical expert in order to handle the mass of figures involved in truck problems. He has to have an extended knowledge of transportation and transportation methods. He must make a study of more or less intricate equipment.



George M. Graham

Vice-president of the Pierce-Arrow Motor Car Co., and member of the Motor Truck Committee of the National Automobile Chamber of Commerce

"It is going to take time to develop a force of men fully qualified to do this work. It is but reasonable to suppose that such men will look for ample rewards. Until the truck business is developed to a far greater volume, the traffic will not produce the kind of salaries required to get right type of men, but there is a steady development in this direction."

#### A Trained Man is the Better Man

That salesmen, to attain the best results, will have to be men trained to the work, is Mr. Graham's opinion. I suggested to him that the Burroughs Adding Machine Co., which did a gross business last year of \$31,000,000, is spend-

ing \$250,000 in training salesmen this year to sell a machine which costs the consumer an average of \$300 each, and that the motor truck industry, which did a gross business last year of \$432,000,000, might reasonably be expected to spend some money on educating its salesmen. Mr. Graham replied:

"This question points a solution to the proper development of the motor truck salesman. Many of the larger companies have applied training schools for salesmen, and all must eventually do so, since in no other way is it possible to get the right kind of men. From our viewpoint we think selling skill is more important than technical truck knowledge. We should rather prefer to train into truck knowledge a man who has had good selling experience than to attempt to give selling experience to a man who has never sold, and who has to recommend him, only a knowledge of truck mechanics."

No estimate of the commercial car industry and its manufacturing and merchandising problems could be thoroughly covered without a serious consideration of the problem of servicing the truck after it passes into the hands of the ultimate user. And on this subject Mr. Graham has some ideas that should be hammered into the service organizations of every truck dealer in the country. In answer to my question as to the importance of service to a dealer's future business, Mr. Graham said:

#### Service and Success Go Hand in Hand

"Service as applied to the automotive is unquestionably a very important factor in maintaining sales volume. Rendered effectively, it yields satisfied customers, creates good will, maintains prestige and breaks down sales resistance.

"Service is a big, broad, vital issue and experience has demonstrated conclusively that, rendered effectively, it is just as essential in the successful marketing of the automotive as any other of the automotive manufacturer and dealers' activities.

"The events of the past several years have given automotive transportation a tremendous forward impetus. To sustain this impetus, which means to maintain

sales volume, the public must be convinced of the reliability, as well as the rapidity and economy, of this particular mode of transportation. Reliability involves quantity, quality and availability of service and results depend, to a large extent, upon proper organization, competent personnel, adequate facilities, and a definite policy.

"Present day purchasers of motor trucks are not induced to buy through a desire simply to acquire a mechanism but for the convenience or profit, which the investment yields. Any service rendered to the owner must, therefore, tend to insure him in securing the object of his purchase—uninterrupted, efficient and economical transportation.

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buil bas pro solv "In considering the development of service, emphasis must be placed on the availability of effective repair work and at the lowest cost consistent with first class workmanship. Periodical inspection, education and instruction in the maintenance and operation are also important adjuncts to successful service. In the last analysis, however, to secure satisfactory, uninterrupted, efficient and economical transportation, it is imperative that every owner have ready access to a stock of repair parts of ample size and variety at all times, in addition to adequate and effective repair facilities.

"Underlying all these requirements, the entire service organization must be permeated by the spirit of service, which in the last analysis is 'courtesy.' This is powerfully effective and creates in the customer, who is the recipient, a feeling

of confidence and satisfaction.

"It is a very poor policy to minimize the importance of servicing customers' cars or trucks. Improper organization, inadequate facilities, indifference and lack of courtesy breeds suspicion and discontent, and will do more to retard development of industry than any other cause. "The public, profiting by past experience and knowing very well that the truck is subject to wear and sometimes to abuse, in which case repairs and adjustments are necessary, prefers to deal with manufacturers or distributors who, in making a sale, give with a guarantee of legitimate service. Such a guarantee means nothing more nor less than a desire, coupled with ability, to meet what is fundamentally a moral obligation."

It has long been a conviction with me, through meeting and talking with motor truck dealers big and little all over the United States, that much good could come to the industry through a closer contact between factory executives and their dealers in the field. I asked Mr. Graham what his ideas are on this subject.

"Many factory executives keep very close to their dealers," said Mr. Graham, "others lack this proper contact. But the necessity for this close relationship is so manifest that the whole tendency in the industry is in this direction."

As to the future of the industry Mr. Graham is, as all who know him or have heard him speak, optimistic. Of the future he says:

"I have nothing but the most sincere optimism as to the future of the automobile and motor truck business. What we need at this time is a superior courage. This slump will pass as have all others and we are merely sharing the burdens of all lines of business.

"No one disputes the increasing recognition of the motor truck. The harvest awaits the time when conditions become normal and buying is resumed. Among other things a great building program has been waiting for five years. Its inauguration will inevitably necessitate the widespread co-operation of motor trucks.

"As far as 1921 is concerned, I do not believe there will be any great spurt. The country has not yet started buying and the increase in transportation equipment must naturally wait on greater production. But I do think that we are now at the low ebb, and that there will be a steady improvement.

"Nineteen twenty-one should be a good vear, 1922 a better one, and barring occasional interruptions, there should be a steady and sane growth in this great motor truck industry."

## Pre-Show Merchandising Plans Stimulate Interest in Trucks at Boston Show

Truck Dealers Full of Optimism and Showing Renewed Interest in the Truck Business. Many Plans Are Being Put Into Effect Which Will Help to Stimulate Truck Sales

ROM a spectacular point of view the 19th Annual Boston Automobile Show was perhaps the most unusual show that the management ever staged, and as far as attendance is concerned the show had something on last year's event. First of all the weather was exceptional, at least for Boston show week; it usually is accompanied by rain or a blizzard. At any rate the open roads permitted a great deal of motoring, with the result that a good number of out-oftown dealers arrived in town via highway. Such a throng jammed the streets on the opening day that the police asked the show management to throw the doors open fifteen minutes sooner, so as to relieve the congestion. On the opening day more paid admissions were counted up than on the same day last year, while throughout the entire week the show was crowded. The interest which this show created can readily be attributed to the advance work which the management did, in advertising the show thoroughly. A greater amount was spent for this purpose than last year.

As in former years the truck exhibits were located in the basement of Mechanics building. To get the visitors into the basement to view the truck exhibits is a problem which each exhibitor tries to solve for himself. Of course the usual

sight seeing crowd takes in everything that is to be seen but such a crowd does not offer many truck buyers. However, to attract those prospects who were really worth while, many exhibitors did quite a bit of mail campaigning before the show.

For instance one New England distributor who handles a well-known truck displayed a number of special bodies, including a large furniture body, an ice cream body and a special coal body. Instead of simply displaying these bodies and waiting for the customer to come along, this company sent letters out to all concerns listed on their prospect list, telephone directory, etc., who might be interested in these particular bodies, and invited them to visit their exhibit at the The manager of this concern reported that this idea was well worth while, as it was the means of lining up a number of concerns who otherwise would perhaps not have taken the time to inspect these bodies at the distributors show room.

In so far as new trucks are concerned, there was very little shown that was new. The Facto and the Ajax were the only newcomers, both of which are locally built. All the well-known makes were represented, and those that could not find room in the show buildings proper were exhibited on the street.

A number of tractors as well as the small garden variety of tractor helped to add variety to the exhibits. Special fire apparatus, ambulance, and other municipal bodies were much in evidence. One company attracted quite an unusual amount of attention to its product by exhibiting a grocery store on wheels.

On the whole the show aroused a great deal of enthusiasm among the dealers and has undoubtedly accomplished that for which it was staged.

#### Motor Equipment Needed for Rural Schools

The rural schools throughout the country, according to the National Automobile Chamber of Commerce, present excellent sales opportunities to the automotive dealer. Thousands of automobiles are needed today by these schools to replace horse-drawn equipment, to renew wornout motor transportation units and to serve additional school routes.

Twelve thousand consolidated (rural union) schools are now in operation in the United States, according to the U. S. Bureau of Education, and the same authority reports that fully half the vehicles used for carrying pupils are mo-

# There is Still Hope in a Hub Standardization Compromise

FFORTS to reconcile the various interests in a final agreement of the much discussed hub standardization work being under consideration by the Society of Automotive Engineers at a meeting of axle manufacturers, roller bearing manufacturers and ball bearing manufacturers at Detroit proved fruitless. The meeting adjourned with but little hope of progress along the lines now under discussion.

The controversy still hinges on the fact that there cannot be an interchangeability between roller and ball bearings, since the outside diameter of the latter is larger than that of the former.

It must not be construed, however, that the work has been abandoned. It is still felt in all quarters that some agreement can be reached. A suggestion, of some merit, sounding a hopeful note at the meeting, was the possibility of hub diameters and flanges for wood wheel construction being standardized.

The expense of the work of hub standardization has been largely borne by the Automotive Wood Wheel Manufacturers' Association and the Automotive Metal Wheel Association, a sum of \$20,000 having been spent to date. Mr. Carlton desired to enlist the financial aid of the other interests who were to benefit from the hub standardization, namely, the bearing and axle manufacturers. No action of any kind was taken in regard to this matter, but it is thought that help from this quarter will be forthcoming. Although the work of hub standardization was originally undertaken by the Wood Wheel Association, with the idea simply of standardizing hub bores, flanges, bolt sizes and locations for wood wheel service, it has been carried on subsequently with the idea of adopting a program that would be of maximum benefit to the motor truck industry.

Cornelius T. Myers, consulting engi-

neer, who was retained by the Automotive Wood Wheel Manufacturers' Association and the Automotive Metal Wheel Association, to take charge of this work and who was made chairman of the committee of five, the members of which consisted of representatives of prominent axle manufacturers, made a statement in regard to the manner in which the work had been carried on.

With reference to the subject of bearings, Mr. Myers stated that this was actively canvassed and studied for five months and it was the unanimous opinion of this committee of five and of the truck division of the S. A. E. standards committee that ball bearings could not be made interchangeable in any series of hubs which could be laid down. There were fundamental differences in the design of ball and roller bearings which called for differences in dimensions which could not be composed. The decision of these men to offer as the first step in the standardization program a series of hubs equipped with roller bearings was based on the fact that in the past two years some 95 per cent of the bearings used in the front hubs of motor trucks having load capacities of from 11/2 to All the 7½ tons were roller bearings. prominent axle companies agreed that the designs submitted were in line with the best practice and should be followed in Four roller bearing new construction. companies can furnish interchangeable bearings for the proposed standard hubs. The bearings selected are cheaper than bearings now being used on well designed axles for similar load capacities. The bearings selected are those which will be in quantity production by the roller bear-

ing manufacturers.

The subject of a standard series of hubs to take ball bearings should be considered by itself and submitted to the S. A. E. when all particulars with regard

to it are thoroughly discussed and approved, not only by bearing manufacturers but by manufacturers of axles and of motor trucks.

Mr. Myers gave it as his opinion that the success of the proposed standard would depend upon the favor with which it was received by the motor truck trade, and not upon the individual preferences of any class of parts manufacturers. If the present standards for roller bearing hubs appeal to the motor truck trade, parts manufacturers will certainly cater to this demand. If the motor truck trade is willing to pay 15 or 20 per cent more for roller bearings, hubs and wheels in order to adopt standards where ball bearings can be installed in hubs of the same dimensions, this is a matter for the motor truck trade to decide. Ball bearings would not be strictly interchangeable with roller bearings in any event, but it would allow axle manufacturers to machine the same hub castings by means of different tool equipment to take whatever type of bearing the customer wished.

It was Mr. Myers' opinion that the program already approved by the truck division of the S. A. E. standards committee should be given formal sanction, so that 95 per cent of the motor truck trade would be able to take advantage of it, and that work should be carried on to place a similar series of hubs for use with ball bearings before the industry at the earliest possible moment; that to delay the adoption of the roller bearing series in the hopes of getting a really serviceable interchangeability with the ball bearing series would tend to continue the present condition of affairs in many new designs, which are at present projected, namely, a multitude of small and unessential variations in design details, the sum total of which constitute a very considerable burden on the truck industry.

How can you improve your service department?
What is the most important thing to be considered in service work?
How can you make the owner live up to his part of the contract?
How can you prevent the salesman from making irresponsible promises?
Why doesn't your service station show a profit?
How can you improve your service department at least expense?

Many other questions on this important subject will be thoroughly answered and discussed in the June issues of all Chilton Publications — Automobile Trade Journal, Commercial Car Journal, Chilton Tractor Journal.

# Ohio to Adopt New Model Road Law

Sub-Committee of the National Motor Conference Committee Has Just Completed a Set of Recommendations to Go Before the Ohio Legislature for Inclusion in New Road Law Which Ohio is Soon to Adopt. New Law Will Regulate Tire Equipment and Will Limit Loads According to Degree of Cushioning Medium. Speed to be Regulated According to Tire Equipment

By RALPH C. BUSBEY

HE need for greater uniformity in state vehicle laws is rapidly becoming apparent. Several state legislatures, virtually groping in the dark, are attempting to enact legislation, while others already have, calculated to regulate and restrict motor vehicular traffic, without having at hand as the basic factors, any of the fundamentals recognized as necessary and essential to the proper drafting of statutes designed to reduce road depreciation to a minimum.

In the main, state statutes dealing with motor truck usage have been built around the sole idea of restricting the motor truck's load according to its tire equipment. Some laws seek to limit truck loads according to the inch-width of tire equipment. Others attempt to limit truck loads according to the gross weight, and still others specify certain maximum weight loads per axle or wheel, both inclusive and irrespective of the tire equipment and the inch-width of direct tire contact with the road.

It is significant that there has seemingly been no attempt to draft laws which will give thorough and equitable consideration to the matter of motor vehicle regulation from the standpoint of the road builder, the user of the road, the manufacturer of vehicles, the carrying capacity of the road, the pedestrian and the general public's welfare and safety. Yet it is coming to be recognized that these constitute the basic elements upon which all such state statutes should be builded.

State laws have lately become so conflicting in regards to the regulation of motor vehicular traffic that the rapidly increasing use of the motor truck as a means of inter-city transportation, both in actually supplanting and in augmenting railroad freight service, is apt to be seriously affected unless there is brought about quickly a greater degree of uniformity in state regulations, and also unless there is taken into consideration in the drafting of new laws or revision of present statutes, the fundamental elements found to exist from the several separate viewpoints previously stated.

In an effort to devise legislation directed along proper lines, and to guide various state legislatures in revising present statutes or in enacting new vehicle laws, six national automotive and allied associations have assigned their experts to the task of drafting a model vehicle law. These associations include the American Automobile Association, the Motor and

Accessory Manufacturers' Association, the National Automobile Chamber of Commerce, the National Automobile Dealers' Association, the Rubber Association of America, and the Trailer Manufacturers' Association of America.

Out of the movement has grown a "Motor Vehicle Conference Committee," which has named sub-committees for each state, and which has drafted a model law known as the "Proposed Uniform Vehicle Law" to serve as the ground work for state legislation in bringing about an eventual uniformity of state regulations of motor vehicular traffic.

The findings of this national conference committee, in conjunction with the results obtained from road impact tests conducted officially by the Bureau of Roads of the United States Department of Agriculture, have resulted in virtual determination of the fact that the weight of the truck load, the speed of the vehicle and the lack of cushioning medium, or degree of road impact from worn down tires all contribute to road depreciation, and must therefore be regulated. In this connection the cushioning medium or degree of impact of tire equipment is regarded as vitally important. It is something which heretofore has been practically ignored in all vehicle legislation passed by various

In summarizing the observation made by the Motor Vehicle Conference Committee and by the Bureau of Roads, the sub-committee of Ohio, which is making special recommendations for the state. of Ohio, says: "It is pointed out with solid tire equipment the impact increases very rapidly with the increase of speed, but only very slightly with pneumatic tires. It is also pointed out that worn out solid tires give an impact of from 20 to 30 per cent over the impact of new solid tires, and that in comparison of the speed on pneumatic tires versus solid tires, a five-ton truck on pneumatics can go 24 miles an hour with the same impact as a solid tire truck going at eight miles an hour; also that indications are that the impact of an old solid tire increases practically directly as the increase of load, speed remaining constant."

For Manufacturer, Distributor, Dealer and Repairman Alike —the June Service Digest

"With these facts before us," the committee's report reads, "it is evident that the law must provide for a limitation of speed which will be smaller, the larger the size of the vehicle and load; there must be a limitation as to the amount that solid tires can wear down before they are past their usefulness and cease to cushion; and there naturally should be a maximum limit load per axle, beyond which the road cannot be expected to stand up. In addition to these conclusions drawn from actual impact tests which were made under paved road conditions, it is desirable to include a certain minimum tire width for each load in order properly to protect dirt, macadam and other soft surfaced roads."

The road impact tests, upon which the committee bases its foregoing recommendations, were made by the Bureau of Public Roads to determine the amount of impact delivered to road surfaces, and the effect of this impact on different types of

The tests have revealed that the gross load of the truck is not the principal factor which influences the pressure of the wheels of the truck on the road surface. It was found possible to have vastly different impact pressures exerted on the road by two different trucks, both having the same gross weight but having different distribution of their sprung and unsprung weights. Out of these findings have also grown the recommendations or suggestions that in framing legislation dealing with the restriction of maximum sizes of motor trucks on roads, the actual wheel pressure on the road should be regarded as more important than the gross weight of the truck.

The accompanying chart shows the increase in road impact according to increase in speed of the truck, according to its tire equipment.

As result of these various tests, various recommendations made by the special sub-committee of Ohio, for inclusion in any model vehicle law which may be finally adopted by the Motor Vehicle Conference Committee, include the following provisions:

"No licensed motor vehicle or trailer whose wheels are equipped with solid rubber or pneumatic tires having a weight (including load), greater than 22,000 lb. on both wheels of one axle, shall be operated on the highways of this state."

(Continued on page 80)

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# Trucks Merchandised Through Ingenious Plans With Comprehensive Forms

Philadelphia Dealers Have Individual Methods That Appeal. Some Salesmen Are Mechanics as Well. One House Uses a "Family Bible." Duplicate Memoranda on All Messages, Phone, Verbal and Written, Save Trouble

ROBABLY in no city in the United States are truck dealers making more constructive efforts to get, keep track of and retain prospects than in Philadelphia. They are spurred on by the knowledge that in this "workshop of the world" and its outlying territory the field is an enormous one and

that the surface of potential trade as yet has been hardly scratched, despite the dealers' continuous solicitation, circularizing and advertising.

It is said by local compilers of statistics that there are only approximately 3000 individual truck owners in this city of about 2,000,000 inhabitants, aside from those having the lighter delivery cars. This, however, does not refer to units of transportation but to owners. Numerous owners, of course, have several trucks and some have large fleets.

In this "go-get-the-business" period at the start of a new year it is important to know how different dealers have varied concepts of what is meant by the word "prospect." To some there are "live" prospects and to others all prospects are "live" until they are actually dead.

Most dealers have a list of prospects who have seemingly "petered out," buried away in a special file, awaiting the Gabriel trump of a better judgment on their part. Other dealers deem it a pure waste of time and effort not to have a sharp line of demarcation between the "live" and apparently "dead" prospects and to concentrate all energies on pursuing the "live" prospects.

Just as there are shades of difference between dealers' views of what constitutes prospects, so there are variations in sources of obtaining prospect lists, in methods of sales approach, of emphasis in interview and follow-up letter, in pushing service to strengthen sales, in instructing and priming the sales force for the daily battle, in holding "post mortems" in the sales manager's office to avoid future mistakes and in maneuvering to win the prospect from a competitor.

Gets Many Prospects Through "Tips" From Drivers

Investigation of "tips" to salesmen through drivers of trucks, especially Apex and Ward LaFrance trucks, is a prolific source of prospects for the Superior Motors Corp., 1828 Market St., which merchandises those vehicles, both retail and Here are some of the corporation's strong points in obtaining and retaining prospects and turning them into customers:

Every salesman on the force is a mechanic, not only thoroughly competent to explain understandingly to a prospect any part or mechanism of the vehicles

but actually to repair them if necessary or intelligently direct their repair.

Where a prospect has a large fleet of trucks the salesmen work in teams. For instance, one salesman will interview the head of the firm and the purchasing department and the other will talk with the service manager and the mechanics. This salesman being a mechanic has his task made easier for him than it would be otherwise. double approach, according to C. J. Hughes, president and treasurer of the corporation, has worked out very satisfactorily.

When a salesman is in competition with a representative of a rival concern, whenever it is possible to do so, he is instructed to insist upon the prospective buyer inviting both trucks to his door for comparison. The salesmen are trained to have enough confidence in their product to make this bold stroke. It is argued that since the Superior Motors Corp. salesman has no fear of the outcome, but on the contrary every confidence, the competing concern should be willing to stand the test.

Salesmen are directed to report a customer's or prospect's criticisms of a truck, if any, what he says in praise of it and what he says in comparing it with another make of truck.

Both retail and factory letters are issued to prospects and there are separate files for each kind. From a series of four letters numerous customers are obtained. The first letter is from the factory, the second is from the local office, the third is from the factory also, all three setting forth features of the truck, while the fourth, which is of a more general nature, announces that a salesman will call on a certain date. After

#### LUEDINGHAUS QUALITY MOTOR TRUCKS

SPECIFICATIONS

11/2, 2 and 31/2 Ton Models

L UEDINGHAUS Engineers Have Selected Units of Proven Ability Throughout; Expanding Service and Emergency Brakes; Differential—Brown-Lipe; I gnition—Splitdorf—Impulse Starter; No Better Frame Than Parrish & Bingham's; Governor—Waukesha—Built-In; Has Stewart & Warner Speedometer and A Shuler Front Axle—Timken Bearings. Universal Joints and Propeller Shaft—Spicer; Schebler, Model "A" Carburetor.

Q UALITY and Luedinghaus are Synonymous; U nsurpassed in Performance by any Truck; A Buell Whistle and Dietz Lamps; L ubrication—Forced-Feed; Bimel Wheels; I ntake and Exhaust Manifold Cast in One; Tuthill "Titanic" Springs—Guaranteed; Y ou Know the Dependability of Lavine Steering.

M OTOR—Waukesha, Heavy Duty; Our Own Make, Copper Tubular Radiator; Transmission—Detroit, Sliding Gear; Oversized, Every Part and Unit, Even the Rear Axle—Wisconsin Worm Drive.

T RUCKS That Have Been Excelled by None.
R adius Rods—Steel I-Beam.
U nlimited Reserve Power in all Models.
C lutch—Borg & Beck. You Know, the
K ind of a Truck that Means 100%
Service with a Slower Rate of Depreciation.

#### WOOD QUALITY MOTORS COMPANY Distributors

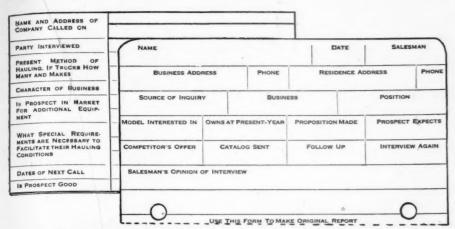
4 and 6 S. Twenty-first Street Philadelphia, Pa.
Bell Phone, Spruce 4348

Luedinghaus Specifications Are Brought Pointedly to the Prospect's Attention in a Pink Folder Arranged in Clever Acrostic

The folder is enclosed in a letter, accompanied by a self-addressed return postal asking for further information.

wholesale. The concern is distributor of Ward LaFrance trucks in Pennsylvania east of and including Altoona and in three-fourths of New Jersey. It distributes the Apex in Pennsylvania, New Jersey, Delaware and Maryland.

The corporation is the only retailer of the trucks in the city of Philadelphia and there is a force of ten salesmen for retail work alone. There are nineteen dealers in the territory supplied by the concern



Above: Prospects of the Wood Quality Motors Co., Philadelphia, Are Recorded on Comprehensive Cards Like This. Below: Daily Sales Report Slip Used by Philadelphia Nash Motor Co.'s Salesmen and Carried by Them in Their Loose-Leaf Pocket Notebook.

the salesman's visit, if there is no immediate result, more letters from the factory will follow.

The corporation insists that the salesman on his first call shall not mention trucks until the prospect has done so, the call being more in the nature of getting acquainted and obtaining good will as well as learning the prospect's characteristics. This plan, according to the sales manager, James McVey, has been found satisfactory. Finally the salesman, the sales manager or some member of the firm calls for prospect's decision.

Every salesman registers his prospect immediately, so there will be no conflicting claim in the office. Should a prospect at the same time be registered by another salesman there is a conference and the man best adapted to cope with the situation is assigned to the case.

A prospect ordinarily is followed up for sixty days, although, of course, there are exceptions.

The chief means of obtaining customers is through the salesman, through newspaper advertisements and the follow-up letters from the factory and the local organization.

One form of salesman's daily report is used for both retail and wholesale orders. This is a manila form,  $8\frac{1}{2} \times 5\frac{1}{2}$  inches, with the following entries to be made: Name of salesman, date, name of customer (dealer or otherwise), his address, by town, county and state, what he now handles and the territory he covers. Below is a blank space for the recording of general information about prospect, which may include what he is personally interested in and his characteristics.

From these reports the data are copied by a stenographer on prospect cards for the filing index, alphabetically. The cards are kept in duplicate, one for the salesman and the other for the office. The reports are compared in conference, such meetings being held almost daily.

An interesting dual retail and wholesale order form is used by this concern which saves time, space and paper. The retail and wholesale order spaces are in parallel columns, itemizing the entries of model, color, extras, government tax, freight, fire, theft and collision insurance and carrying charge.

In the matter of service the corporation stipulates that the truck purchaser shall bring in his vehicle for free inspection at least once a month for one year or allow the corporation's inspector to go over it once a month. A stock of parts valued at \$10,000 is kept on hand for the Ward LaFrance trucks and a minimum stock of parts for the Apex.

One method that saves much trouble and inquiry in the office is that of duplicating every memorandum for any one and every arriving telephone message as well as taking a copy of every letter. In the case of telephone messages and other memoranda a copy is left with the sales manager and another for the person for whom it is intended. In this way no messages can go astray.

#### Picks Out a Trade Each Week to Solicit

Luedinghaus trucks are merchandised in the Philadelphia territory in an interesting manner. The Wood Quality Motors Co., of which Charles H. Wood, Jr., is president, is just turning over to the Packard Garage & Supply Co., 5517

North Germantown Ave., the company's retail business for the city and county of Philadelphia. The wholesale end is being conducted for the present at 4 and 6 South Twenty-first St.

The wholesale territory includes twenty-eight counties in eastern Pennsylvania, ten in southern New Jersey, the District of Columbia and all of Delaware and Maryland.

The company has a list of 1500 dealers in the territory and has turned over to the Packard Garage & Supply Co. a mailing list of 6000 names. When an out-of-town prospect is secured it is the practice to communicate with the nearest dealer and take him to call on that prospect to arrange for service and parts.

James F. Packard, head of the Packard Garage & Supply Co., will continue the Wood Quality Motors Co. plan of using the mailing list to pick out therefrom each week the names of men engaged in a single line of business, to concentrate upon them for that period a thorough sales approach, checking the list from the classified telephone directory, so there may be as little waste effort as possible. One week the metal trades may be the object of "attack" while another week the ice cream manufacturers.

A series of eight letters, both retail and for dealers, is sent out once a month for eight consecutive months. Each letter "plays up" strongly some feature of excellence of the Luedinghaus truck and every one carries across its face in red stipple the slogan, "A glutton for work." In most of the letters is found this sentence, like the burden of a song: "Regardless of how much more you pay no truck can surpass the Luedinghaus Quality Motor Truck in a single detail."

A small but extremely noticeable pink folder, stating the specifications of the Luedinghaus truck, is enclosed with every letter.

This folder is cleverly worked out so that the initial letters of all the lines,

(Continued on page 72)

	12345678		12 13 14	15 16	17	18 19	20 21	22	23 24	25	26 27	28	29 3	0 3
	PROSPECT RE	CORD		Date				5	Salesman					
	Name		1											
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	Source of Prospect													_
	Model and Type Prefer	red		_										
	Special Equipment and	Prices Quote	d											
	Trade Deal	No	w Owns											
Date called	Appraisal No.		Appraisa	Date				Dem	onstratio	n G	wen			•
	Terms Wanted					-								
	Principle Competition													
							Da	ae to	follow	ıp				

Front and Reverse Sides of the Prospect Card Used by the Hurley Motor Company, Philadelphia, Distributor of Reo Speedwagons. Tabs on Different Colors, Each Color Having a Meaning, Are Placed on the Days of the Month at Top, to Indicate Calls the Salesman is to Make.

APR

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# There's Money in Selling Lighting Equipment

#### Highway Regulations Require Trucks to Carry Adequate Lighting Equipment

By C. P. SHATTUCK

HEN the State Legislatures conclude their sessions many will have defined how the motor vehicle's lighting equipment shall function; that is, the number of lamps, the distance a substantial object shall be clearly discernible, etc. The lighting clause will generally be found in the bill defining what is proper equipment and a number of these bills became laws in 1920. The enactment of laws dealing with the lighting equipment of the motor vehicle is not new. They have been changed from time to time and have been accepted as necessary to the general public's welfare and safety.

If we analyze the bills now in force and those pending at the time this article was prepared, it will be found that although they lack uniformity, the majority specify "that the two front lamps shall be white and of sufficient power to be visible at 200 feet and to reveal objects at from 50 to 75 feet. . . . That the rear lamp shall show a red light and constructed or placed so as to render visible the registration plate."

#### Plan Enforcement of Law

The majority of motor trucks operating outside of the cities are not equipped to meet the legal requirements. And if one should check up the number of trucks he meets between two cities he will be surprised to note the number having only front oil lamps. And if the rear lamp equipment be noted it will be found that many, many trucks are being operated at night with ordinary hand lanterns, showing a white, NOT A RED LIGHT AS THE LAW SPECIFIES. And the majority of the registration plates are not sufficiently illuminated to enable one to note the numbers.

It is because of these conditions that the legislators are passing lighting bills. If we analyze the reasons we must agree with the legislators that such action is necessary. For a number of years trucks equipped with large bodies have traversed the highways of the country at night with no other lighting equipment than a pair of oil lamps in front. And, as a rule, the lenses are so coated with soot and dirt that the driver of an approaching vehicle cannot distinguish the lamps and truck until he is within a few feet of it. Of course, if the lamps were kept clean it would be possible to see them more easily but the average driver, particularly those who drive but little at night, is not given to cleaning lamps.

If we look beneath the surface we will find that the passenger car owner is a factor in lighting legislation. The average owner is anti-truck. He, and the driver of the horse-drawn vehicle, are "agin" the truck. There is no use dodging the fact that there is steadily growing sentiment against the truck on our highways by other users. While the far-reaching beams of the headlights of the passenger car enable its driver to note a truck many feet distant, the light does not prevent the truck driver from keeping to the center of the road when he has poor lights. Safety-first compels it. And the passenger-car driver must take to the ditch to avoid the possibility of an accident.

The writer is not taking up cudgels in defense of the passenger-car driver, although the above statements may so appear. I have ridden with truck dealers at night in their passenger cars and heard them cuss truck drivers who "hogged" the road. One cannot blame the truck operator, particularly on a strange or a narrow highway. He has to feel his way. If you desire to learn what he is up against, Mr. Reader, switch off the headlights on your passenger car and try driving with only feeble side lights. It will be some experience, I assure you.

It is because of these conditions that determined effort is to be made in the near future to enforce the lighting laws. In discussing the subject with a number of dealers and in various places I was surprised to note the indifference displayed. The concensus of opinion was that it is an owner's proposition.

#### Is It an Owner's Proposition?

But is it? It is not if the distributor and dealer are sufficiently interested in their customers to see that they obtain maximum efficiency from their trucks. Can a truck driver operate with safety and make good time if he has to feel his way along a dark highway?

After studying the lighting problem from its various angles the writer con-tends that the distributor and dealer have not carefully considered the best interests of the industry, or the possibilities accruing from the merchandising of proper lighting equipment. It is with lighting that this article deals and it was necessary to outline the reasons for the pending legislation and its probable enforcement. The industry, the manufacturer, dealer and distributor have not considered its best interests if sales of chassis without proper lighting equipment are sanctioned. The writer does not intend to discuss whether the chassis should come equipped or not, although the subject affords many interesting angles. By proper lighting equipment is meant front lamps that will conform at least to lighting bill suggested by the Joint Committee on Uniform Vehicle Laws which says:

"Vehicles not exceeding 15 m.p.h. be equipped with front lamps capable of furnishing light of sufficient power to render any substantial object clearly discernible on a level highway at least 50 feet directly ahead and at least seven feet to the right of the axis of such vehicle for a distance of at least 25 feet. If said vehicle can exceed a speed of 15 m.p.h., then they shall have front lamps capable of furnishing light of sufficient power to render any substantial object clearly discernible at least 200 feet directly ahead and at the same time at least seven feet to the right of the axis of such vehicle for a distance of at least 100 feet.

The vehicle at night shall have on the rear thereof and to the left of the axis thereof, one lamp capable of displaying a red light visible for a distance of at least 100 feet behind such vehicle.

shall carry a lamp illuminating with white light the registration plate so that the characters thereon shall be visible for a distance of at least 50 feet."

It is the fundamentals of this bill that

It is the fundamentals of this bill that many states are incorporating in their lighting laws. But the front oil lights and average oil rear light do not comply with the law. In interpreting the average lighting law it will be found that it specifies every motor vehicle shall be equipped. This includes motor trucks and can be made to apply to the truck operated only in the cities. And in some states it is said that the law will thus be interpreted.

#### Many Trucks Lack Proper Lights

The use of proper lighting equipment will do much to popularize "truck trans-portation," and it will open a market to the distributor and dealer that affords wonderful opportunities for merchandising and service. According to the Commercial Survey Department of the Chilton Company there will be added to registration 223,000 trucks in this country in 1921. Assuming that 50 per cent of these will be supplied the dealer with electric or acetylene lighting, there will remain over 100,000 not equipped. Of the 800,000 odd trucks in service it is estimated that at least 50 per cent are either not equipped to conform to the laws or the lamps are in such condition due to neglect and abuse as not to be serviceable. This affords a potentiality of over 500,000 trucks to be equipped. Of course, some states will not have passed lighting laws compelling proper equipment but it should be borne in mind that trucks from such states may operate in adjoining states where there is a lighting law.

Assuming that some truck owners, obliged to install "legal" lighting equipment, will not incur the expense of electric lighting, he will naturally desire a lighting equipment that will conform to the law and at the same time not require a considerable outlay of money. One solution of the problem is the use of acetylene gas, which in connection with some outfits comes in a metal container. These tanks are charged at the filling stations of the maker and when the gas supply is exhausted are exchanged by the distributor or dealer for a fully charged one.

# Merchandising and Servicing Prest-O-Lite Acetylene Lighting System

HE writer does not propose to discuss the utility or dependability of the simple acetylene gas lighting system for motor trucks other than to state that the system, with lamps equipped with proper lens and reflector meets the requirement of safety-lighting laws enacted, and bills pending, at the time of this writing. The light conforms to the various laws as it gives a far-reaching or penetrating beam and a widely diffused beam, while the latest development in acetylene rear lamps obviates the troubles experienced with some oil lights.

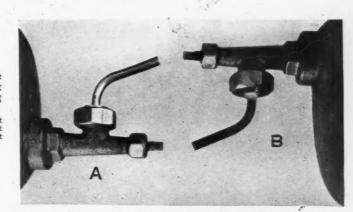
Some readers may remark that this is all "old stuff." So it is, but have you, Mr. Dealer, ever considered the possibilities of making some real money by merchandising and servicing acetylene lighting equipment? Possibly not. Probably you have been content to order a gas tank, lamps and fittings when you customer insisted on the equipment and never gave a thought to the future, let us say the service angle, for example.

#### A Concrete Example of Sales

The writer spent several days analyzing the sales possibilities of merchandising and servicing acetylene lighting equipment and here are some of the discoveries he made. He found that in New York City, for example, one dealer or rather distributor had landed a contract to equip 600 odd 'trucks and tractors recently purchased by the city. It is reasonable to assume that the list price was not paid, but it is safe to assert that the profits will run into four figures. This distributor is equipping fleets of from 2 to 20 trucks and maintains a force of salesmen to sell the owners. His annual profits in merchandising and servicing gas are such that Uncle Sam welcomes his contribution to the income tax fund.

Illustrating the Wrong and Right Way of Mounting Tank.

A shows union at bottom, the incorrect position. B, the right way, union at top.



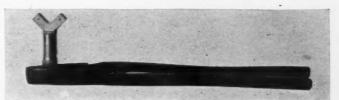


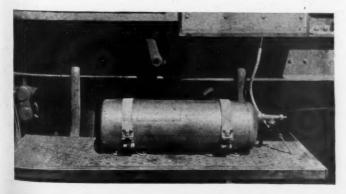
The Brackets Are Bolted to Running-Board and Tightened on Tank by Wing Nut

Showing Results of Abuse and Too High a Flame

This lamp was taken from a truck with the mirror badly cracked and sooted. The white spots are candle grease, as the driver attempted to get by with a candle. A reducing valve would have prevented damage to the mirror.

Brass Piping and Compression Couplings Are Recommended as Tight Joints Are Necessary to Avoid Waste of Acetylene.





Illustrating Correct Mounting of Prest - O - Lite

The union or outlet should be placed at the top and short length of gum hose used to connect union with the piping.

What this distributor is doing, you can do, Mr. Truck Dealer! And, if you are a live wire, you can sell the owners of your competitors. Now as to proper equipment, costs, profits and service. An equipment meeting legal requirements is the style B Prest-O-Lite tank, containing 40 cu. ft. of gas, two brackets, two headlights, one tail or rear lamp, a reducing valve, brass tubing, compression fittings and rubber tube. The list price as supplied by the Prest-O-Lite Company is as follows:



Illustrating the Prest - O - Lite Acetylene Tail Lamp, Headlight and Adjustable Bracket.

Two Headlights	\$10.50
One B Gas Tank	24.00
Two Brackets and Bolts	2.40
Reducing Valve	4.60
Tubing (Average Cost)	1.08
Fitting and Rubber Hose.	1.50
	\$44.08

The Prest-O-Lite Company's distributors allow the trade a discount of 25 per cent on the equipment, which nets the

truck dealer a profit of nearly \$11 on each equipment sold. Small business? Not so. Multiply \$11 by the number of trucks you have sold not equipped plus those you can sell and the volume of possible business is not small by any means. In addition to the profit on the equipment there is profit to be made on the installation, a labor charge or on a flat rate basis. There is also a profit in the tank exchanges. It is estimated that the average number of tanks used is 8 per year per truck, varying according to localities.

A truck dealer selling 50 equipments, not a large number by any means, and taking care of the exchanges, could net nearly \$1000 the year. This profit is not one to be lightly regarded in these days of keen competition.

How to Buy Equipment

There are two methods of merchandising the equipment. The city dealer convenient to a Prest-O-Lite distributor can sell the owner and send the truck to the Prest-O-Lite station, the dealer receiving his 25 per cent commission on the list price of equipment installed. If not convenient the truck dealer can purchase the equipment and install it. The dealer will be obliged to buy the tank, brackets and reducing valve from the Prest-O-Lite distributor but if the dealer so desires he can purchase his lamps, tubing and fittings direct from the makers of these products or their distributors.

#### Correct Installation Methods

For the benefit of those not familiar with the requirements of gas tank lighting installation, the methods approved by the Prest-O-Lite Company are described, and accompanying illustrations show the steps of the work. The best location for the tank is preferably on the running-board where it is not only easily removed and replaced but the gage easily read. If

mounted on the running-board use 3% x 1 in. ALAM cap screws to bolt the brackets. The brackets should be spaced 9½ in. apart, from center to center, and the bolts should be set up tight. Loosen wing nuts of bracket, open or lift top half and insert the gas tank. There is a right and wrong way to install tank. The tank should be so placed that the union or outlet member is at the top or as shown

BEST 250
THE EST-O-LITE CO-INC

CO-CO-INC

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The Gage Indicating Pressure in Pounds and Atmospheres.

The Left Shows a Full Tank, and the Right
an Empty Container

at B in an accompanying illustration. If placed as indicated at A there is a possibility of acetone or liquid finding its way into valve, creating bubbles of gas that will cause lights to flicker or go out.

Brass tubing of ¼-in. O. D. should be employed, not copper, and compression couplings, as it is essential to have leak-proof joints as the gas is compressed to 250 lb. pressure. The piping should be laid or so carried that it will not be possible for the driver to step on it or the pipe to become injured. All piping should be secured by clips to prevent movement and chafing. An accompanying sketch shows plan of piping and connections for headlight installation. A

good gum hose, ¼-in. O. D. and with a wall thickness of not less than 1/16 in. should be employed to connect tank with main line of piping and to the lamps. The tail lamp should be securely fastened to reduce vibration to the minimum. The lamp brackets recommended by the company are adjustable permitting of varied installation as well as use of lamps of different diameter.

#### Do Not Alter Focus

All acetylene headlights come equipped with the burner properly located and no attempt should be made to improve the focus of the light. The brackets should be so adjusted that the rays of light will give the far-reaching beam and at the same time fully cover both sides of the road. The best and most economical results will be obtained by the use of the 1/2-ft. standard pillar burner which will bring the flame in the correct relation to the center of the mirror of the lamp. Use of 5/8 or 3/4 ft. burners are not essential as the 1/2 ft. by tests has proven to be the most satisfactory. With this burner a pair of headlights supplied by a B tank will give 40 hours' continuous lighting.

The use of 3/4-ft. burners will afford but 26 hours' continuous lighting

ous lighting.

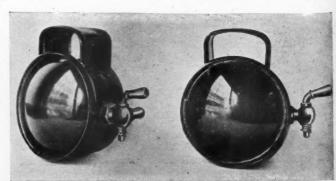
Mention has been made of the reducing valve, a device that automatically and without any attention keeps the pressure constant at its source of supply and regardless of whether the tank is fully charged or nearly empty. The advantages of the reducing valve is that it keeps the flame at its proper height, prevents flaring which cracks mirrors, and saves the time usually wasted by the driver running back and forth from the lamps to the tank in attempting to secure the right flow of gas or pressure. It is stated that

the initial cost of the reducing valve will be saved in a few months in the gas conserved.

#### Service Easily Rendered

There is little service to be given with the acetylene lighting system other than instructing the driver how to clean burners, test for leaks, change burners and read the gage. If the lamps are not tight road dust will penetrate to the burner, clogging the gas passage in the tip, and invariably it will be found that it is the tip nearest the mirror that is affected. There are two ways to clean a burner. Either use compressed air or the power

The Latest Prest-O-Lite Acetylene Gas Tail Light and Showing Control Valve. There is No Door to Open or Close.



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pump, or the special needle-like tool supplied for this purpose. In removing and replacing a burner many drivers pinch it with the pliers. The base of the burner should be grasped by the pliers or as shown by an accompanying illustration indicating proper method.

#### How to Read Gage

Every Prest-O-Lite tank is equipped with a gage which registers in lb. or atmospheres or both. The tanks are charged to a pressure of 250 lb. or 17 atmospheres, at 62 degrees Fahrenheit. therefore, one atmosphere is equal to approximately 14.7 lb. If the tank has a marking of ATM'S only the pressure, lb., can be determined by multiplying the atmospheres by 14.7. If the temperature of the tank be lowered or raised, such as taking the tank from a warm place to the cold air, the red indicating hand will move showing a less pressure but CHANGE IN TEMPERATURE DOES NOT AF-FECT THE QUALITY OR QUAN-TITY OF THE GAS. Drivers should be instructed to use the key to shut off the supply when a reducing gage is not employed. Using pliers ruins the needle valve. The rubber connections should be examined from time to time and when cracks appear new tubing installed. Suspected leaks can be tested and located by rubbing soap suds over the joints and other places. Never use a match or naked flame to locate leaks. The proper height and shape of flame of burners is illustrated in an accompanying drawing.

The following suggestions are made for merchandising and servicing the equip-

#### Suggestions for Selling

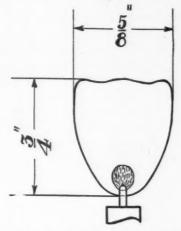
List names and addresses of your customers whose trucks are not equipped with headlights and mail these a copy of the lighting law with a letter stating salesmen will call and explain what constitutes

proper equipment.

Instruct all salesmen as well as other employes to note name, address and registration number of trucks and cars not equipped with headlights, and those whose equipment is in bad condition. The reports to be turned over to the salesman in charge of equipment. Letters and copy of law to be included in plan.

Stocking tanks, brackets, reducing valves, piping, lamps, tubing, burners and burner cleaners

and advertising same and installation, with snappy copy in the daily newspapers.



The Proper Height and Width of Flame is Important and Should Conform to These Dimensions

Compile list of trucks other than those sold by you and mail literature and follow up by call. Mention service in letter.

Instruct service department head and employes to interest drivers in proper lighting equipment and have road inspectors make reports on trucks seen not equipped. Road inspectors should see that drivers understand system and its care. Sell the salesmen on the advantages of

selling lighting equipment with the chassis and provide them with selling arguments. If salesmen are on commission the extra dollars will be appreciated. If salesmen cannot sell prospect turn the lead over to the acetylene equipment salesman.

The prospect list of trucks other than you have sold can be compiled from state registration lists and by using the Commercial Car Specifications Tables, those equipped with gas or electric lighting can be eliminated. It will be surprising the

Brass Piping and Compression Couplings Are Recommended as Tight Joints Are Necessary Avoid Waste of Acetylene.





Reducing Valve Automatically Maintaining Correct Pressure

It prevents blowing of the gas and avoids pos-sibility of flame cracking the mirrors of the headlights as well as keep flame at correct height.

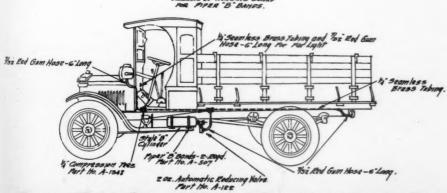
leads which can be secured by noting the trucks on the highways not equipped.

The merchandising of lighting equipment is not only profitable but will aid in counteracting the sentiment against trucks which are operating at night with oil lamps. The contact established through selling should be valuable to a dealer and will obtain leads when the prospect is in the market for a new truck for your equipment salesman will have an opportunity to make the acquaintance of the owner or driver.

#### Potentiality of Market

The dealer merchandising and servicing the equipment is warranted in carrying a certain number of filled tanks. Where 25 trucks are serviced five spares will suffice. In the 300 cities where the Prest-O-Lite distributors carry tanks and equipment one need not carry so large a stock but the smaller dealer not convenient to a distributor should stock at least five. Prest-O-Lite Company states that its distributors and dealers will co-operate with the trade in the matter of exchanges and the policy is a liberal one.

Reference has been made to the potentiality of the lighting equipment market. It is estimated that with the complete equipment costing between \$45 and \$50, and assuming that 500,000 trucks will eventually be equipped, it represents a business of \$22,500,000. Even if only 10 per cent can be sold; that is, but 10 per cent of the states pass lighting bills, there is a market of over two million dollars. Add to this the replacement business or exchanges on the basis previously referred to and some idea of the lighting market can be obtained. How much of this business are you going to secure, Mr. Dealer, for your share? Are you going after it or will you let the other fellow do it?



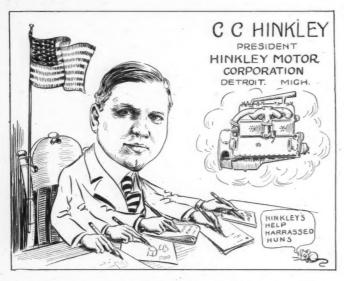
Dimensional Sketch, Showing Correct Installation of Piping, Tubing, Tees, Etc.

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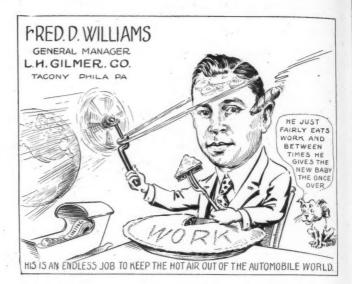


# FRIENDLY TIPS ABOUT SOME "BIG ONES"

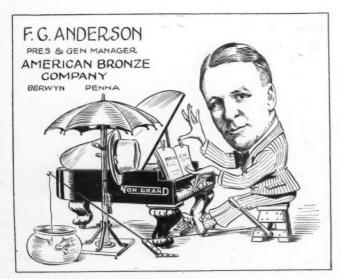




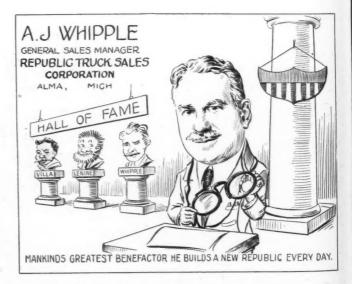
C. C. Hinkley—Born in Ohio. After usual school and college education went with Peerless Company; later with Stearns; after several years became affiliated with Olds Motor Company, eventually becoming Chief Engineer. He carried this tile to Chalmers organization, remaining there for seven years. While there he completed plans for going into business for himself. He started production on his new engine about the time U. S. declared war on Germany and built his initial product in the form of Class B Truck engines for the Government. President Hinkley is now busy producing heavy-duty automotive engines for peaceful pursuits and is doing a real job we hear.



Fred D. Williams—Born in Illinois, 1881. After completing education, spent ten years with the United States Rubber Company, following this connection practically the same length of time with the H. W. Johns-Manville Company. In the spring of 1918 Mr. Williams became connected with the L. H. Gilmer Company, of which he is now vice-president and general manager.



F. G. Anderson—Born in Keokuk, Iowa. After finishing High School he studied law in the office of his father, who owned and operated the Keokuk Street Railway System. Later, when this line changed from horse-drawn cars to electric, Anderson for a short time sold farm implements, finally connecting with the Parlin, Orendorff Martin Company, of Omaha. Later Anderson secured a partnership, the company changing its name to Martin-Anderson Company, this business eventually consolidated with E. Children's Sons Company, of Council Bluffs. Anderson entered the automobile field in Kansas City, forming a company there to sell Rambler cars. Later he joined forces with the Cadillac Distributor on the Pacific Coast. From there Anderson started in the jobbing business for himself and while in this line became interested to such an extent in Non-Gran that he joined the American Bronze Corporation, in which company he has risen to position of president and general manager.



A. J. Whipple—Prior to starting in the automotive field, Whipple was manager of Atlas Portland Cement Company and General Sales Manager of Marquette Company. In 1917 he became connected with the Diamond T Motor Truck Company, first as special representative at Washington, D. C., and later in capacity of General Sales Manager. Recently Mr. Whipple joined the Republic Truck Sales Corporation as General Sales Manager which position he is in at present. He is a well-known figure in the automotive industry, having served as Director of the National Association of Motor Truck Sales Managers and is at present a member of the Motor Truck Committee of the National Automobile Chamber of Commerce.



# EDITORIALS



#### Again the Heavy Trucks Are Blamed

EWSPAPER dispatches from New Hampshire state that the highways of that state are in bad shape, and that the damage done to them by heavy trucks amounts to \$100,000. A bill, just passed, prohibits all vehicles carrying over three tons gross weight from using any of the trunk lines, cross state or state-aid highways until the roads have become dry and packed down. A fine of \$100 will be collected for each offense. The state hasn't any money with which to build new roads and just enough money for some patch work.

Our opinion of the situation is this: In the first place some of these roads were built probably when Moses was a boy; and secondly, the ordinary water-bound macadam road will not stand up under any kind of motor vehicle traffic especially if the sub-base is not constructed properly or suitably drained. If these same roads had been built of a more permanent material they would not have gone to pieces so quickly. What New Hampshire should do, and any other state that is in the same predicament, is to get busy and float some bonds and do some real road building. Huge sums of money are wasted in this country every year on patch work when the only solution is a new road. Stop laying roads which experience has proven to be inadequate for the traffic they must bear! As long as the legislators of a state will not appropriate money for a capable road building program just so long will the whole state suffer. It will suffer from higher prices in all commodities that go into the home. Just because a few miles of roads have gone to the bad is no indication that the heavy trucks are responsible. There is no more important work before legislators today than that of road building. Plenty of money must be appropriated for this work if we are to have roads which will compare favorably with the rest of this country's progress and growth. All the propaganda which is continuously being levied against motor truck traffic will not keep motor trucks from the roads. The very life of the American people is dependent upon motor truck transportation. And this country cannot afford to let the lack of roads stand in the way of its progress.

#### Cashing in on Body Sales

ANY truck dealers are content to sell a chassis and let the customer handle the body end of it himself through the medium of a local body builder. Some dealers figure that they cannot handle a stock of bodies from a monetary standpoint and, therefore, give the body end secondary consideration. They feel that the local body builder can take care of the customer and, as long as the local body builder comes across with a commission, they are satisfied. This is perfectly satisfactory when it is necessary to supply a special body which cannot be secured from the builder of standard bodies. But, the greater percentage of bodies used are standard and include such bodies as dump, contractor, farm, ice-cream, express, stake, coal, etc. These can be bought cheaper and can be obtained quicker because they are built in quantities.

If the dealer cannot afford to stock a line of bodies, he can at least familiarize himself with all the standard makes of bodies on the market and have a generous supply of sales and advertising literature on hand. He should be able to suggest a body which will adequately meet the customer's needs, and know definitely how long it will take to secure that body. Some of the body companies have branches and distributors in most of the larger centers and are ready to serve the dealer promptly, and co-operate with him to the fullest extent.

The dealer who expects to serve his customers promptly cannot afford to let the absence of a body hold up the sale of a chassis. If at all possible he should stock a certain number of such bodies, which he knows from experience are in greatest demand in his locality. If he is selling on the vocational plan he should have bodies on hand of interest to the particular trade that he is going after during that particular period.

It is a well-known fact that a chassis sells easier with a body on it than without. The dealer who can supply only the chassis is seriously handicapped. The dealer will do well to study the advertisements in every issue of this publication, so as to thoroughly familiarize himself with the various makes of bodies offered.

June Issue-A Liberal Education in Service

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# News of the Trade in Brief

(For Factory Items, Personals, New Incorporations, Etc., See Pages 90-91)

#### City Chambers of Commerce Should Maintain Transportation Committees

"Transportation-The Keynote of Prosperity"—is the title of a bulletin recently issued by the N. A. C. C. Transportation Committee, revealing the possibilities of rural expansion through the extensive use of the motor truck.

A practical plan advanced by the committee is the use of a transportation committee in connection with the town or city Chamber of Commerce. Says the bulletin, in part:

"Every Chamber of Commerce throughout the land, should have a transportation committee. The personnel of this committee should be drawn from local merchants, manufacturers and farmers. It should have a first-class traffic manager and a farm secretary, and should work closely with the local carriers and motor truck lines and operators.

"The duties of the committee would be to study railroad freight car supply and movements, tonnage awaiting shipment, to or from your community, future or potential tonnage.

"The St. Louis Chamber of Commerce employs an expert or specialist who is constantly working among the farmers and county agents for the purpose of making agricultural production profita-The duties of the farm secretary would be to encourage greater production of farm products, inaugurate proper operation of motor transport lines between farm and city, and to create a ready market for these products at consuming centers.

The N. A. C. C. call attention to the fact that its transportation committee will gladly aid in the formation of a transportation committee in any Chamber of Commerce and work with it in effecting successful results.

#### N.A.C.C. Encouraging Safety Movement

Five thousand dollars in prizes for essays on safety by school children has been voted by the National Automobile Chamber of Commerce as part of a campaign to educate the careless motorist; or, if he cannot learn, to drive him off the streets. Playgrounds are the remedy, the car makers believe, for the hazards of children playing in the street. "Children have a right to play," is one of the main principles of this campaign; and any safety program implies advocacy of adequate play areas. As an instance of what may be accomplished by educative effort, the chamber's announcement says that Detroit's record shows the value of arousing children's interest and providing playgrounds. This city, which had a great war-time growth of promoting it from the eleventh in 1910 to the fourth city in the nation, has succeeded in reducing its auto death rate from 157 in 1917 to 137 in 1920.

#### Automotive Production Increasing Rapidly

The new revival of production of the industry is by no means local, but can be found in every section of the country. However, the Detroit district seems to be taking the lead and is daily taking on more workmen.

A large distributor whose name has been withheld, has placed an order with the Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis., covering approximately \$4,-000,000 worth of Oshkosh trucks. Work on this contract to begin immediately.

April has brought a re-employment of 1200 men at the Goodyear Tire and Rubber Co., which will permit a production of 16,000 casings and 16,000 tubes daily. The plant is running five days a week.

Production at the Ford plant during the month of April will approximate 90,000 cars according to an announcement from Henry Ford. This means, said Mr. Ford that every car and every bit of finished stock on hand, when the depression set in, has been sold.

The Federal Motor Truck Co., Detroit, is now operating on a 50 per cent basis, with the plant running full time. This announcement was made by M. L. Pulcher, vice-president and general manager of the company.

Duplex Truck Co. is operating full time, with limited production. Wheel Corporation and Auto Body Corporation report substantial increases in the number of men employed.

#### SHOWS

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April 16 to 23, 1921—Red Banks, N. J.—Annual Automobile Show. Armory, auspices of Monmouth County Automobile Dealers' Assn. Pass. Cars, Trucks and Accessories. April 20 to 23, 1921—Goldsboro, N. C. Second Annual Automobile Show. Wayne Warehouse (90 x 300 ft.). Passenger Cars, Trucks, Tractors and Accessories. W. C. Denmark, Sec'y, Chamber of Commerce of Goldsboro.

April 21 to 23, 1921—Lincoln, III. Annual Show under the auspices of the Logan County Automobile Dealers' Assn. Tented Exhibit. Passenger Cars, Trucks, Tractors and Accessories.

April 25 to 30, 1921—Halifax Canada. Eastern Canada's Patriotic Motor Show, auspices of G. W. V. A., the Ladies' Auxiliary and the I. O. D. E. Passenger Cars, Trucks and Accessories. Halifax Armouries (27,500 sq. ft.). Eastern Office: Chronical Publishing Co., 17 W. 42nd St., N. Y. City. May 10 to 14, 1921—Rocky Mount, N. C. Third Annual Automobile Show of Eastern Carolina. F. E. Dunn, Chm., Rocky Mount, N. C. September, 1921—Sacramento, Cal. Seventh

N. C.
September, 1921—Sacramento, Cal. Seventh
Annual Show during State Fair. Automobile Tent (30,000 sq. ft.). Passenger
Cars, Trucks, Tractors, Accessories and
Agricultural Implements. State Agricultural Society, Sacramento.

#### CONVENTIONS

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Atlantic City, N. J., April 27 to 29, 1921—
Ninth Annual Meeting of the Chamber of Commerce of the United States.

Buffalo, N. Y., May 17 to 19, 1921—Spring Meeting of the Service Managers of the National Automobile Chamber of Commerce. Hdgrs., Iroquois Hotel. H. R. Cobleigh, Sec'y.

Chicago, Ill., May 31 to June 3, 1921—Annual Convention of the National Electric Light Association, of which the Electric Vehicle Section of the Commercial National Section is a part. A. Jackson Marshall, Sec., 28 W. 39th St., New York City.

#### Coming Events

Chicago, III., October 12 to 14, 1921—Annual Convention of the National Implement and Vehicle Association. H. J. Samiet, Sec'y, 72 West Adams St.

Convention of the National Implement and Vehicle Association. H. J. Samiet, Sec'y, 72 West Adams St.

Chicago, Ill, November 14 to 19, 1921—Annual Convention and Business Exhibit of the Automotive Equipment Association at the Coliseum.

Cleveland, O., May 4 to 7, 1921—Eighth Annual Convention of the National Foreign Trade Council, Hollenden Hotel. J. G. Hammond, Sec'y, 207 Chamber of Commerce, Cleveland.

Detroit, Mich., June 13 to 16, 1921—Annual Convention of National Team and Motor Truck Owners, Inc., held aboard ship during a cruise on the Steamship Naronic. F. L. Henks, Sec'y, 92 Fort St., W. Detroit. Elkins, W. Va., November 8, 1921. Semi-Annual Meeting of the West Virginia Automobile Dealers' Association.

Mackinac Island, Mich., June 20 to 24, 1921—Summer Meeting of the Automotive Euipment Association. Address, 1813 City Hall Square Bldg., Chicago, Ill.

New York City, N. Y., April 25, 1921—Eastern Automotive Equipment Association Meeting. R. A. Picard, Sec'y, A. J. Picard & Co., New York.

Philadelphia, Pa., June 15, 1921—Annual Outing of the Motor Truck Association of Philadelphia, at the Lu Lu Country Club.

Santa Ana, Cal. April 22 to 23, 1921—Southern Division Meeting of the California Automobile Trade Association, Robert W. Martland, Pacific Bldg., Oakland.

Santa Barbara, Cal., June, 1921—General Meeting of the California Automobile Trade Association. Robert W. Martland, Pacific Bldg., Oakland.

Association. Robert Bldg., Oakland, Cal.

West Baden, Ind., May 24 to 28, 1921—Semi-Annual Meeting of Society of Automotive Engineers, at the West Baden Springs

#### FOREIGN EVENTS

Algiers, Algeria, Africa, April, 1921—Annual Agricultural and Automobile Show.

Bandoeng, Java, Dutch East Indies, September, 1921—Second Industrial Fair. Automobiles and Trucks. Netherlands-India Industrial Fair Association.

Basle, Switzerland, May 28 to June 8, 1921— International Automobile Exhibit.

Brussels, Belgium, December 3 to 15, 1921— Annual Belgian Automobile Show.

London, England, June 3 to 17, 1921—Fifth Annual Rubber Exhibit. Royal Agricutural Hall.

Condon, England, October 13 to 23, 1921—Olympic Commercial Car Show.

Milan, Italy, April 12 to 17, 1921—International Sample Fair. Exhibit includes Automobiles and Aeroplanes.

Mexico City, Mex., April 20 to May 5, 1921— First Annual Automobile Show. National Theater Passenger Cars, Trucks, Tractors and Accessories. Gustavo Alana, Mgr., care of "El Automovil en Mexico."

Paris, France, October 5 to 16, 1921—Automobile Show. Grand Palais.

Prague, Czecho-Slovak, May 28 to June 4, 1921—Thirteenth Annual International Automobile Show. Passenger Cars, Trucks, Tractors, Motorcycles and Accessories. Auspices of Czecho-Slovak Automobile Club. Address Czecho-Slovak Legation at Washington, D. C.

Utrecht, Holland, September 6 to 16, 1921— International Industrial Fair. American Representatives: The New York Chamber of Commerce for the Netherlands and the Netherlands East and West Indies, Inc., 44 Beaver St., New York.

#### Important Questions for Atlantic City Meeting

WASHINGTON, D. C .- Wages, overhead and production costs are among the questions to be considered at the ninth annual meeting of the Chamber of Commerce of the United States to be held at Atlantic City, April 27 to 29. These subjects will be discussed at a group meeting representing fabricated production.

In outlining the program for the group meeting, E. W. McCullough, manager of the Fabricated Production Dept. of the Chamber, today said that "the fact that the major portion of all commodity costs is labor of some kind, makes it apparent that it is useless to discuss the return to normalcy without giving consideration to the subject of wages in production, transportation, selling and distribution. If an important item in the cost of living represents fifty operations of labor, how can adequate reduction in its selling price be made unless labor contributes its share? The practical handling of this subject will be in the hands of business men and economists.

"Overhead, or burden, will be dealt with as a potent factor in the stabilizing of production and prices. There will be discussion of such questions as: Is it fair to load present production costs with the actual overhead charges if the plant is running at only part capacity? If it is not possible to collect overhead when it is made, how can loss be avoided? What is normal overhead and how arrived at?"

#### Failure of Road Program Not Discouraging Alabama

The failure of Alabama's good road program, which would entail an appropriation from the federal government of \$5,-000,000, is acting as a stimulant for truck selling activity throughout the state.

However, the good that would accrue from this highway improvement bill is being realized more and more every day. Instead of being discouraged by the failure of the bill, those interested in the state's economic prosperity are renewing their efforts to have the improvement measure reconsidered.

The farmer is suffering much from lack of highway improvement. He has discovered that precious pounds were jogged off his live stock in getting it to railroad station in a creaky old wagon. He realizes the value of the truck and is therefore much interested in highway im-

Southern Alabama is the agricultural section of the state. Progressive dealers, particularly those about Birmingham, intend to carry on a campaign of truck education in this territory.

It is also the intention of these dealers to follow up this doctrine by preaching the necessity of a truck transportation system to relieve the railroads during a small freight congestion and expedite the produce movement of the small farmer who has not reached the point where his income is sufficient to warrant the ownership of a truck.

#### Licensing Automobile Mechanics

Attempts are being made in some states to license automobile mechanics and repair shops with the idea of creating a better class of shops and ridding the industry of the so-called saw, hammer and chisel mechanics. This is simply another form of taxation which the law makers will attempt to pass along on the industry if given a chance and which will in no way remedy the supposed evil. There is no need for a tax of this character for the simple reason that the state would not make any provision for examining the mechanics, as such a procedure would cost more for each individual than the amount of the tax. Without thorough examinations each individual would simply pay the tax and the calibre of his work would not change one iota. With the present house cleaning that is going on in many service stations we believe that the situation, as far as mechanics goes, will automatically adjust itself. The service station manager has more material to choose at this time and it is up to him to place his shop on a reputable basis. Any form of taxation levied in the usual manner will not change conditions, but will simply be a means of kidding the public into the belief that they are being protected from incapable mechanics and irresponsible shops.

#### Investigation Begun on State Highway Operations

WASHINGTON, April 8.-The investigation started by the Governor of Arkansas into the methods by which the highway program of that state has been carried on is attracting wide-spread attention in Washington and, judging by reports reaching the national capital, in states throughout the country other than Arkansas. In Iowa, South Carolina, and still other states investigations on a somewhat less sensational, but very interesting, scale have also been started, some through the medium of legislative committees and others through state officers.

The result promises to be an airing of the highway situation from a Federal standpoint as soon as the special session of Congress meets. Senator King of Utah has said he will introduce a resolution, probably on the first day of the new session, under which all phases of the Federal aid to highway program will be gone into. In a statement he expresses the view that wasteful methods have prevailed in the handling of funds in the states, and that desired results have not been gotten.

#### Truck is Now Second to Railroad in Transportation **Importance**

Statistics for 1920 show that motor trucks carried more tonnage than either inland waterways or interurban trolley lines. Motor transport now ranks second

only to rail transportation.

In less than ten years' time motor transportation has grown from nothing to its present prominence. A concrete example of the remarkable growth is had in a check taken of traffic between Akron and Cleveland. In two years' time loaded truck tonnage increased approximately 200 per cent.

The rapid growth of the industry has been so pronounced that many vital problems have been only partially solved and its leaders face the task of retracing some of their strides in order to perfect weak

spots in the structure.

The travel and transport bureau of the B. F. Goodrich Rubber Company points out four problems that are up for solution now. They are: Formation of local associations to eliminate rate cutting and other harmful practices; expanding in the field of junction terminal transfer of freight; to break shippers of the "exclusively railroad habit" and educate them to use motor trucks for short hauls, and to warn truck operators against overloading and overspeeding in order not to antagonize highway authorities.

In the transfer of less than carload freight between railroad stations at large junction terminals the motor truck is effecting a great saving in time and expense. For instance, at Cincinnati 14 motor trucks with demountable bodies have replaced 115 slow-moving horse drays and release over 75 cars daily for main line service. Over 25 per cent of the total less than carload freight handled at Cincinnati was transported by

these 14 motor trucks.

#### Gill Company Now Has 39 Factory Branches

CHICAGO, March 22-The Gill Manufacturing Co., manufacturer of Gill onepiece piston rings, has opened branch offices in the following cities: Albany, N. Y., 228 Washington Ave.; Albuquerque, N. M., 706 W. Central Ave.; Buffalo, N. Y., 1032 Main St.; Des Moines, Ia., 1301 Locust St.; Hartford Conn., 349 Trumbull St., and Syracuse, N. Y., 402 Grape St., making a total of 39 factory branches through which Gill piston rings are distributed to the trade.

Expansions in service facilities, which are announced from time to time, are in accord with the demand of the motoring public as well as the policy of the Gill Manufacturing Co., which is to provide 24-hour piston ring service to every jobber, dealer and repair man in the country for every make of internal combustion en-

gine manufactured.

The remarkable growth of the regrinding business has made it necessary to pay particular attention to the stocks of oversize rings, which are carried complete at all Gill branches, from which they are supplied without extra charge.

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#### Bonus Plan Announced by Bearings Service Co.

The Bearings Service Co., of Detroit, Mich., which acts as the service department of the Timken Roller Bearing Co., the Hyatt Roller Bearing Co., and the New Departure Manufacturing Co., has announced its 1920 bonus plan covering allotments to employes as of December 31, 1920.

All employes who were associated with the company for a continuous period of six months or more, prior to the date of distribution were eligible to participate in the plan, according to A. K. Hebner,

president of the company.

Approximately 2 per cent of the net sales for the calendar year of 1920 were set aside as the bonus fund. Many provisions of the plan are original with the Bearings Service Co. The scheme provides for the holding of bonus allotments in a trust fund which pays the participant interest guaranteed at the rate of 6 per cent per annum on the principal sum. given participant is privileged to withdraw at his own option, 20 per cent of his bonus each year, or he may elect, at a greater benefit to himself finally, to receive payment of his bonus allotment in full at the end of five years, together with a proportionate share of all forfeitures and excess earnings.

Participants are divided into four groups, according to their length of service and personal efficiency ratings. Their participation in the allotment is in proportion to their classification. The plan applies to all employes of the company, both in the general offices at Detroit and in the company's branches, of which there are 33, located in the principal cities of

United States and Canada.

The company has found that this plan, which is now in its second year of operation, tends to encourage its employes in the habit of thrift and, of course, benefits the concern through the building up of a loyal and efficient personnel.

#### Efforts Made to Raise Tariff on Aluminum

WASHINGTON, D. C .- One of the big fights which will be staged in Congress when the work of framing new tar-iff legislation is undertaken will be between the Aluminum Company of America, sole producer of aluminum in the United States, and manufacturing interests which use aluminum as a basic raw material in their industries.

The existing tariff on imported aluminum is two cents a pound. The Aluminum Company of America, which has a monopoly in the aluminum production field on this continent, is seeking to have the aluminum tariff rate increase to seven

cents a pound.

Manufacturers who purchase their raw material from the Aluminum Company of America as well as industries who purchase the finished product from the manufacturers, are urging that the raw material either be placed on the free list or that the existing tariff rate of two cents a pound be left undisturbed.

Several elements, including the makers of automobiles, have joined to block the

efforts of the Aluminum Company of America to increase the existing tariff, but the principal advocate of an open market is the National Aluminum Founders' Association. This organization is composed of independently owned and operated aluminum foundries in the United States, representing an investment of approximately \$9,000,000 and employing between eight and ten thousand people.

The founders protest against being limited to one source of supply for raw material, as they maintain would be the case should a high tariff wall be thrown around the single producer of raw aluminum in this country. These independent founders draw attention to the fact that they, unlike the monopolistic producer of the metal, are engaged in sharp competition within the country, not only among themselves, but against subsidiary concerns controlled and operated by the monopoly which produces the metal.

#### This Idea Can be Applied to Various Kinds of Merchandise

There is a psychological factor in novelty advertising that is sometimes overlooked. The public draw the following conclusions from such innovations: First, that the originator of the idea is an upto-the-minute and progressive merchant, and, second, that he must have a substantial going business to put over such an advertising campaign.

Such a note of the novel has been struck by the Heil Co., manufacturer of Quality tanks, bodies and hoists by means of a miniature truck equipped with a Heil Combination body and Hydro hoist. This little model has been making the rounds of the automobile shows and has been a source of interest wherever ex-

The truck has an overall length of 6 ft. 3 in., a width of 31 in. and is about 2 ft. high. It is painted a bright red. The hoist, though very small, is rather powerful and at the various shows it was used to lift passengers, exerting a force at one time of 220 lb.

The first exhibition of the miniature was made in the window of the First Wisconsin Trust Co., Milwaukee. From there it was taken to the Milwaukee automobile show. It was shown at the Chicago Good Roads Show and at various state highway schools.

The model is particularly applicable as window display, the company having received a number of requests for the

use of the truck.

#### International Increasing Truck Output

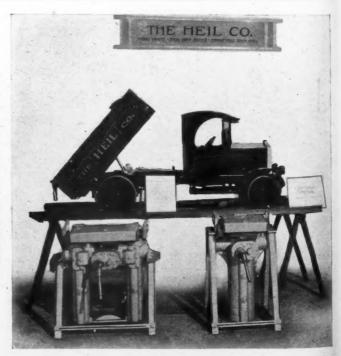
AKRON, O., March 18-Truck business at the International Harvester Co., is on the boom, according to officials. Reports issued this week show the company is issuing 150 trucks a week. The works are producing 500 trucks at present for foreign shipments. The foreign shipments will be completed in six weeks, the officials announce. A program for the year on the manufacture of thresher engines has been completed. Plans for the present call for the manufacture of nearly 6000 of these engines. The officials announce increased production as soon as the roads open up.

#### North Carolina Has Bright Highway Prospects

RALEIGH, N. C .- The North Carolina Legislature has passed a bill authorizing an issue of \$50,000,000 for the building of hard surface roads. money to be used only for state highways and the building program covers a period of ten years. The State Highway Commission is increased from four to ten and Frank Page is retained as chairman.

The Heil Co. Has Capitalized This Sales Idea to Great Advantage

Although originally presented to Mr. Heil, vice-president of the company on Christmas Day by a delegation of employes, it has been used as a show model for the demonstration of Heil products, with marked success. A marked success. A miniature at a motor vehicle show is always a novelty and never fails to collect a crowd. The idea was likewise used at the New York and Chicago shows in an exhibition of Marmon passenger car models. marked success.



#### General Motors Transfers Fitzpatrick from Acceptance to Export

Paul Fitzpatrick, vice-president in charge of operations of General Motors Acceptance Corp., since the organization in January, 1919, has been elected director, vice-president and general manager of operations of General Motors Export Co., effective March 15.

Acceptance Corporation operations under Mr. Fitzpatrick's management resulted in a turnover of nearly \$150,000,000 of automobile paper based on General Motors products, and the development of a world-wide organization.

Mr. Fitzpatrick's interest in the foreign field and experience in foreign credit and finance are by this change brought to bear directly upon the development of the export company.

P. S. Steenstrup, whose long connection with the export interests of the General Motors Corp. is well known to the trade, continues as vice-president and general manager of sales.

## Perry to Resign from Trailer Association

Harry Wilkin Perry has resigned as general manager of the Trailer Manufacturers' Association of America, effective April 1 or May 1, as may be decided when his successor has been appointed. When the trailer association was organized two years ago Mr. Perry accepted the position of manager and established offices for the association in New York, now located in Grand Central Palace, resigning from his position with the National Automobile Chamber of Commerce, which he has held for eight years as secretary of the motor truck, good roads, export and legislative committees. Prior to taking up association work he was identified for a number of years with the editorial departments of well known automobile and motor truck periodicals and was for several years an independent writer of semi-technical articles for a wide range of popular and business pa-

#### Collision Rate on Trucks is Reduced

Commercial cars and trucks are to be granted a reduction of 5 per cent in collision insurance rate if the cars are provided with either a radiator guard or bumper, on condition such devices are approved by the Underwriters Laboratories. This announcement was made public by the National Automobile Underwriters' Conference, the ruling to take effect July 1. Manufacturers of said guards must place their products with the laboratories for listing before July 1.

The valued policy for fire and theft risks is to be abandoned, effective May 1. The value policy is one in which the amount of insurance is specifically named instead of depending on an adjustment to determine the actual value of the automobile at the time of loss.

#### "Buying Has Returned" is Lesson of Detroit Show

Detroit's most successful passenger car and motor truck show was held in the new Morgan & Wright Building in Detroit, March 19-26, and brought spring business on with a bang. Twenty different makes of motor trucks were shown in the big building, many different models with various types of bodies making up the greatest display of this sort ever seen in Detroit. It was one of the most attractive displays of commercial cars ever seen in this country, for the decorations provided by Manager H. H. Shuart and his corps of assistants were far more elaborate and artistic than ever before.

The floor spacing, covering approximately 3½ acres, held a total of 300 passenger cars, trucks of 20 makes and 40 accessory exhibits. The well chosen decorations, in imitation of the Pompeiian period, furnished an agreeable frame for the divergence of colors which furnished this year's exhibit.

The exhibit this year proved that a commercial car section could be included with the passenger car exhibit, a combination which is aiding each other mutually.

One of the noticeable results of the show was the stimulation of truck interest in the down town show rooms. Not content with the exhibits afforded by the Morgan & Wright Building, the prospects visited the agencies to obtain more detailed information.

The ship by truck day was held Tuesday, March 22, and it took the form of a large motor vehicle parade in which appeared almost every type of a commercial car from a light ¾-ton to the 7-ton heavy duty truck. The parade was led by the Dodge Bros. band and an escort of motor cycle police. Throughout

the day motion pictures pertaining to the truck and the highway were shown in the main auditorium. The pictures attracted large crowds interested in this phase of the automobile world.

From a business standpoint the show was an unqualified success. Sales of trucks to both retail buyers and to dealers were reported by practically every exhibitor and several made records better than at any previous show. Attendance went away beyond previous marks and the interest in commercial cars was more pronounced than ever.

Business in the Detroit district is improving fast and the show started the ball rolling earlier than even the most optimistic dealer had hoped.

#### To Manufacture the Hudson Three-Ton Truck

The Hudson, a new 3-ton truck, is soon to make its appearance, to be fabricated by the Hudson Motor Truck Co. William F. Hudson, president of the Hudson Motor Specialties Co., Philadelphia, Pa., and inventor of the Hudford and Flexo, is forming a company which will embody in the construction of the truck, many of Mr. Hudson's patented features.

Mr. Hudson is to be president of the company, J. H. Malone, vice-president. The stock will be full paid and the controlling interest in the president's hands.

#### Hannum Heads Crankshaft Company

George H. Hannum, general manager of the Saginaw Products Co., Saginaw, Mich., has been placed in charge of the Michigan Crankshaft Co., a subsidiary of the General Motors Corp. J. W. Wilford, general sales manager of the Crankshaft Co., has been made general manager of the Central Axle Gear & Products Co.



Trucks Form a Part of Detroit's Twentieth Annual Show

A section of the exhibit of the Detroit Automobile Show which demonstrated to the trade that urgent need of truck transportation made it imperative that trucks be purchased at once. Note the different types of bodies exhibited to meet all the commercial needs of the day. The sales of motor vehicles in Detroit registered a spurt during show week, seldom witnessed in that city.

# **NEW COMMERCIAL CARS**











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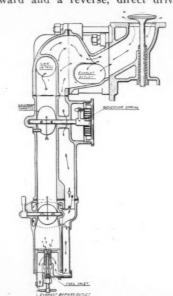
# Many New Features Are Incorporated in the GMC Line of Trucks

EVELOPMENT of a motor truck engine with several new features of design and the introduction of a revolutionary transmission design, by which both speed and pulling power are said to be increased to a large extent along with added economy in operation, are the innovations made public by the General Motors Truck Co., Pontiac, Mich., with the introduction to the trade of the GMC line for 1921.

In addition are many other minor refinements such as electric lighting systems, pressure gun lubrication of the chassis and increased strength of frames and other parts. The 1921 line comprises five models; namely, three-quarter-ton, one-ton, two-ton, three and one-half-ton and five-ton capacities, an addition of one model, the three-quarter-ton over the line of the last two years.

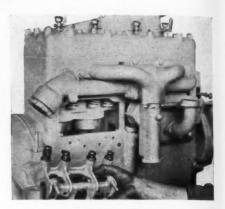
The transmission, known as the GMC two-range transmission, provides both speed in direct drive as well as pulling power in the lower gears and at the same time does not necessitate the use of an engine of excessive size, making the

The transmission countershaft has two sets of constant mesh gears of different ratios, instead of one as in the regular type four-speed motor truck transmission. These sets are controlled by an extra lever, giving the truck two distinct power ranges, each with three speeds forward and a reverse, direct drive re-



Sectional Drawing of the GMC Heated Manifold

maining the same regardless of the range.
Approximately 50 per cent more speed, in direct drive, has been added by this two-range transmission and at the same time 30 per cent more pulling power has been furnished through the low range of

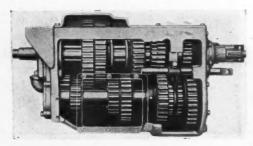


Removable Valve Lifter Assembly

the transmission. And only five major parts are added to those used in a regular type four speed transmission.

The four cylinder, four cycle GMC engine is of the "L" head type and follows a tendency to a longer stroke and smaller bore. It is built in three sizes for use in the various GMC models.

Removable cylinder walls of the "wet" type are a feature of the new engine. These are in the form of cast iron sleeves that are pressed into the cylinder block and are held rigidly in place at the top and bottom. The sleeves are machined to an accurate thickness so that their expansion is uniform. Added to this feature is that of cooling, since the water circulates immediately around the walls and also the economy of replacement in cases of damaged cylinder walls. Replacing a sleeve is a matter of only a few hours and can be done without re-

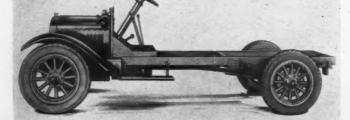


Sectional View of the GMC Two-Range Transmission

truck's operation economical. It is used on all models above the one-ton.

The increase in speed is made possible by the use of a higher geared rear-axle than has been used heretofore in GMC trucks while requirements of pulling power are furnished by giving countershaft of transmission an extra gear reduction. Model K41 Two-Ton GMC Truck.





Model K15 Three-Quarter Ton GMC

moving the engine block from the chassis. No reboring of cylinders is ever necessary.

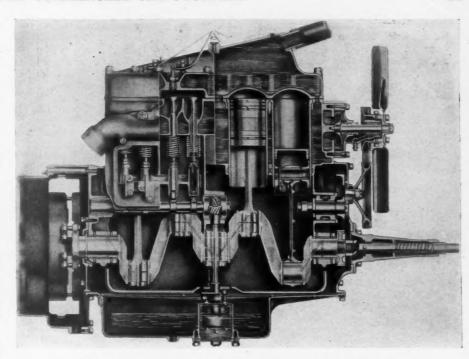
Positive pressure lubrication, supplied by a gear pump, is used throughout the engine with a specially designed oil pump, which in addition to thoroughly settling and screening the oil before it re-enters the system, permits the extraction of 80 per cent of the sediment from the system with the loss of only about a pint of oil.

The carburetion system has been designed to add to engine efficiency. The mixture is heated from the time it is being formed in the carburetor bowl until it reaches the first chamber and is superheated just before it goes into the inlet valves. A special manifold is used for this and it is adjustable for various climatic conditions.

Every wearing part of the engine is replaceable and special attention has been given to the accessibility of these parts. One feature new to motor truck engines is the removable valve lifter assembly. The valve lifters and rollers are held in a case, fastened in position by cap screws. Access to this is through a hand plate on the side of the engine and when the assembly is removed, direct access to the crank is had without removing the oil pan.

In the cooling system the GMC engine has a combination pump and thermo syphon system, the pump being mounted high on the engine so that the pump driven water is thrown directly around the firing chambers while the circulation about the cylinder walls is by thermo syphon action. This approaches the ideal in cooling, giving the coldest water on the hottest sections and warmer water where warmth is essential.

Ignition is by magneto, the ignition being entirely separate from the lighting system. In addition further guarantee against replacement difficulties has been made in such features as placing the mo-



Cutaway View, Showing the Construction of the GMC Engine

tor support legs on the flywheel housing instead of on the crankcase, providing a removable cylinder head and making all wearing parts replaceable.

All models except the three-quarter-ton are equipped with electric lights, generator and battery, all of special design and manufacture and built extra size for truck use. Electric wiring is carried in flexible steel tubing built as a "harness" and is centered on the dash in a neat instrument case with a hinged panel to give access to all switch connections.

The three-quarter and one-ton models have a new wheel of metal felloe, wood spoke type, and the one-ton model is furnished with cord tires as standard equipment. Frames in the heavy duty models are deep pressed steel and heat treated and the radius rods on these models have been lengthened to make the drive more nearly a straight line. Extra brake area has been added to the three-quarter and one-ton models.

In other details the chassis are practically the same as those of former years.

### New One and a Half Ton Waltham Chassis

RECENT announcement discloses that the Waltham Motors Corp., Chicago, Ill., is in production with a new 1½-ton truck of the speed truck type. Its most prominent feature is its complete standardization, incorporating standard units of well known make. It is pneumatic equipped, has a wheelbase of 140 in., road speed of 20 m.p.h., employs the Hotchkiss principle of drive

and lists at \$2350, which price includes the driver's cab.

The engine is a 4-cylinder, vertical, cast in block "L" head type, Model CTU Buda, having a bore and stroke of 3¾ in. x 5¼ in., respectively. The cylinder head is removable. This engine is rated at 22.5 hp., S. A. E. rating. Engine speed is controlled by a Waltham governor.

Ignition is through a high tension mag-

neto and carburetion is accomplished by a Zenith carburetor, which is adjustable with hot air quick starting device. Gasoline is fed to the carburetor by gravity from a cylindrical gasoline tank located under the driver's seat. It has a capacity of 18 gal. Also it is of sheet steel with welded seams.

Engine lubrication is through the full force feed system, including in its system a geared pump. Cylinder walls, cams and pistons are lubricated by splash. Chassis lubrication is effectively secured through the Alemite system. All plain bearings are equipped with Alemite lubricators.

The cooling fluid is circulated through the cooling system by a gear driven pump. The capacity of the entire system is 10 gal. The radiator, which is of the fin and tube type, cast shell, is spring suspended.

From the engine, the power is transmitted through a multiple disk dry-plate clutch, having special hardened disks lined with wired asbestos, to a selective type transmission, providing three speeds forward and one reverse. The engine, clutch and transmission are mounted as one unit. All shafts of the transmission are mounted on annular ball bearings and gears



This Pneumatic-Equipped Waltham Has a Road Speed of Twenty Miles Per Hour

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are made from 3½ per cent nickel steel.

After being transmitted through a twopiece propeller shaft, equipped with three Spicer universal joints and braced in the center by a center bearing to prevent whipping, the power is converted from its direction longitudinal to transverse by a Sheldon worm and worm gear drive rear axle. This axle provides a final gear reduction of 7 8/10 to 1. The worm and worm gear and differential of this axle are mounted in one rigid casting. Annular bearings are used throughout.

The front axle is also of Sheldon make and is of the conventional "I" beam construction. Annular bearings.

The steering gear is of Ross manufacture. It is of the heavy duty type and is mounted on the left side. This steering gear is of the screw and nut type, has large bearing surfaces and positive means of lubrication and adjustment. The brakes are of the internal expanding type, mounted on the rear axle. They are stated to be smooth and sure in operation.

The frame, which is of hot-rolled channel section steel, 5 in. deep, is well reinforced with cross members and gusset plates, all of which are hot riveted. The frame is 32 in. wide, 207½ in. long and the loading distance measured from behind the driver's seat is 120 in. The frame is mounted on four semi-elliptic alloy steel bronze bushed springs. The bolts and springs are made from 3½ per cent nickel steel, hardened and ground.

The front springs consist of 9 leaves, are 42 in. long and  $2\frac{1}{2}$  in wide. The rear springs consist of 10 leaves, are 52 in long and  $2\frac{1}{2}$  in. wide.

The wheels are of the wooden artillery type and are equipped with either pnen matic or solid tires.

The regular equipment consists of driver's cab, two oil side and one tail lamp, tool box, tools, jack and horn. The price of this chassis, complete with the above equipment, is \$2350, plus war tax, f. o. b. Chicago.

The special equipment consists of the following: Generator, battery, electric lamps, starter, all of which are installed and prices furnished on request and Buell warning whistle.

# Special Titan Two-Yard Sub-Grade Truck for Paving Contractors

HE special Titan two-yard subgrade truck for paving contractors, recently introduced by the Titan Truck Co., 25th and St. Paul Ave., Milwaukee, Wis., to be used in connection with the country's huge road building program, is claimed to revolutionize the transportation of all road building materials of either wet or dry mix for all distances of from 1000 ft. to five miles and over. This job has been designed, primarily, for hauling mix over any character of sub-grade, although it can be used for other work in connection with road building.

All known considerations that make for an effective unit for this type of service have been striven for in the construction of this job. It has a 128-in. wheelbase, reducing its turning radius sufficiently to permit turning on an 18-ft. wide subgrade. Its capacity is from 5000 to 6000 1b. and its speed on high is 25 m.p.h. and 5 m.p.h. on reverse. Low pressure on the sub-grade is said to have been obtained through the use of large pneumatic tires. A special feature is the twoyard, two compartment body, which can be raised to a 55 deg. dumping angle. A positive mechanical hoist is used. The tread is 58 in. The distribution of the load is said to be such that its large pneumatic tires give a pressure on the sub-grade of less than 80 lb. per sq. in.

Aside from service all the above lines, the low point of the body when fully raised, which is 29 in. from the ground, adapts this unit for supply stock piles on the sub-grade with sand from pits or railroad sidings. It can also be used for hauling supplies from nearby towns fifteen to twenty miles away.

In order to make this unit meet the severe demands that would be extracted from it in road building service, it was decided to incorporate a 40 hp. engine into it. This engine is a four-cylinder Buda, having a bore and stroke of 4½ x 5½ in., respectively. It is governed to 1150 r.p.m., which permits a road speed of 25 m.p.h. The transmission is a spe-

cial low-geared four-speed constant mesh Cotta, providing a reduction on low of 44:1, and on high of 8:1. Final drive is through a Clark internal gear rear axle, which is fully inclosed and provides a road clearance of 18 in. The load carrying member is its solid axle.

In view of the frequent jerking resulting from discharging heavy materials it was decided to take the drive through radius rods instead of the rear springs, as this severe strain, it is pointed out, if applied direct to the rear springs would result in spring breakage and axle misalignment. The frame is of 6 in. pressed steel and the springs are 46 in. long in the front and 54 in. long in the rear. The pneumatic tire equipment consists of 36 x 6's in the front and 42 x 9's in the rear.

The two compartment body is made of steel throughout and has a total ca-

pacity of 54 cu. ft. The two compartments are separated by a division gate that may be removed at will, making the entire body clear, or in one. The load is discharged through a double acting gate. The inside length and width of the body is 8 ft. 6 in. and 5 ft., respectively. When lowered, the body has an open deck length of 10 ft., which makes it suitable for hauling steel, expansion felts, lumber or machinery. Hoist equipment is either hydraulic with a dumping angle of 45 deg. or the patented Titan mechanical type with a dumping angle of 55 deg. This job is equipped with or without an inclosed cab.

The price of the truck, complete, which includes body, hoist, pneumatic tires, tools, jack, electric lights, battery, generator and war tax, is \$4550 f. o. b. Milwaukee.



Specially Designed Titan Truck for Contractor Service

# Diamond T "Contractors' Special" is Designed Especially for Road Work

In response to the ever increasing demand for road building equipment the Diamond T Motor Car Co., Chicago, Ill., has brought out a new "Contractors' Special" model, which created much interest at the Good Roads Show recently held in Chicago. Road building experts state that a job of this design will fill a long felt want for a truck specially adapted for handling road building materials.

The maker of this job makes public of the fact that the Contractors' Special last fall was offered to one of the largest contracting concerns in the country, the R. F. Conway Co., Chicago, Ill., who gave it a rigid test over a period of time on a strip of road near Morris, Ill. As a result of its demonstrated ability to handle road building materials, this company has purchased 10 of these Specials for spring delivery and will use them on their contracts during the coming year.

It is claimed that this type of truck has proven that it will save of from 25 to 50 per cent over the older, conventional methods of distributing sand, gravel, crushed rock and cement where equipment used varied from 1- to 5-ton units.

This job is equipped with dual end dump hoppers constructed of No. 10 gage steel throughout, each having a capacity of 1 cu. yd., giving a total load capacity of from 5000 to 6000 lb. The short wheelbase enables it to turn easily on an 18-ft. sub-grade. It is fitted with pneumatic ord tires 34 x 5 front, 40 x 8 rear, allowing operation on soft ground and protecting sub-grade from being broken down. The smaller size tires in the front decreases the turning radius, and the weight is supported just as safely as though larger tires were used, because practically all the load is carried on the rear axle. The truck "hook-up" is so designed that the load is properly balanced even when operating on a steep incline.

Simplicity in design has been combined with sturdy, rigid, compact construction. Non-essentials have been eliminated.

Lamps have been removed; a step bracket takes the place of the step board. It has a single seat only, the space usually employed for the second occupant is taken up by a large, roomy receptacle for tools.

Standard equipment includes radiator guard, one tow-hook front and rear. The frame cross members have been placed to give hoppers proper support. The engine is a heavy duty truck type, having a bore and stroke of 4 in. and 5¼ in., respectively, and is capable of developing 43 hp. The carburetor is equipped with an air strainer to prevent dust from entering the combustion chamber and scoring the cylinders and bearings.

All moving parts are completely housed and protected from dust, dirt and grit. A metal shield mounted between the central members of the hopper carrier, protects the worm housing and universal joints from the hopper overflow. The hoppers travel on a studded tract, which

insures proper alignment at all times. Auxiliary springs carried on each frame member and resting on the spring box prevents spring rebound and relieves sidesway. This is claimed to be a valuable feature when the job is being used for maintenance and repair and only one hopper is filled, which naturally tends to throw the load on one side of the chassis. The hoppers dump by gravity upon release of the trip bar, allowing instant and complete scavenging of either wet or dry mix. Dumping shock is absorbed by a

This truck can be used not only as a construction unit but is considered ideal for maintenance and repair, the dual hoppers permitting distribution of load at several repair points. The interest which it created at the Good Roads Show is indicative of the important part trucks designed for contractor service will play in the 1921 road building program.

# Van Dorn Dump Truck Body Hoist

coil spring.

HE Van Dorn Iron Works Co., Cleveland, O., announces commencement of production on a large scale of its new improved hoist, a hoist which is said to incorporate a new idea in hoist construction and operation. It is operated on the screw-jack principle, an improved mechanical method claimed to eliminate many prevalent troubles, reduce expenses and repairs. Special attention was extended to that part of its designing having to do with the attaining of strength and ruggedness so that the truck hoist would stand the racking strains and rough usage involved in truck dumping.

The working parts are made of high grade materials and are all enclosed in a metal casing, protected from dust, grit, moisture and tampering. There is nothing to be adjusted by the operator. The hoist is self-lubricating. The lubricating oil fed in at a single point is distributed to every moving part of the hoist at every operation.

The hoist is firmly bolted to the truck frame through four cast iron, wide spreading legs in the base of the hoist. The connection between the hoist and truck body is made by 5%-in. steel cables affixed to the truck body and rolling over two sheave wheels of the hoist and fastened to an eye bolt at the base of the hoist.

The hoist is operated from the power take off of the truck, which power is transmitted direct to the bevel gears of the hoist. These gears are three in number, two of which control the raising and lowering of the hoist, and the third is





Showing the Diamond T "Contractors' Special"

The job is equipped with dual end-dump hoppers, each having a capacity of one cubic yard

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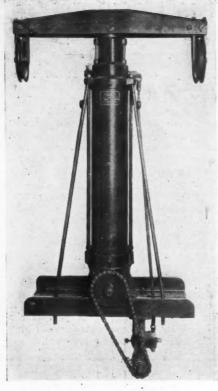
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New Van Dorn Truck Hoist It can be stopped and locked at any point by a hand lever

the driving pinion. They are located near the base of the main body of the hoist and rotate idly in opposite directions on the screw shaft. When the hand lever, which is conveniently operated from the driver's seat, is pushed to the rear, it meshes a hardened steel four-jaw clutch fitted to the screw shaft with the upper bevel gear. This rotates the jack screw in the proper direction to raise a large bronze nut, which is threaded to the jack screw and fitted to the lower part of the plunger. This nut is prevented from turning with the jack screw by a liberal sized key fitted to the inner wall of the housing.

When the plunger is driven up the total load is supported by the heavy screw shaft which rests upon an ample sized thrust bearing.

The hoist can be stopped and locked at any point by moving the hand lever. It stops and locks automatically when the plunger reaches the top of its travel, the lower part of the plunger engaging a rocker arm at the top of the hoist case and automatically shifting the clutch. There is claimed to be no possibility of the raised body lowering while the truck is jerked forward and back to dislodge the load or while the truck is being driven over rough ground to scatter the load. To lower the plunger the lever is pulled forward. The clutch meshes with the lower bevel gear and the jack screw is rotated in a direction to pull down the bronze nut attached to the plunger. The truck can be driving away while the body is lowering, the clutch disengaging automatically when the body settles to its bed.

Brief specifications follow:

The head, which is malleable iron, is fitted with a large bronze bushing which guides the plunger. The housing is a steel tubing bored the entire length to give a perfect guiding surface for the plunger nut. The plunger is of steel tubing, 41/4 in, diam., the wall of which is 5/16 in. thick. The screw is 2 in. diam, 2 pitch, 1/4 in. sq. tread, machined from .30 to .40 carbon steel. The nut, which takes the plunger thrust and acts as a guide for the lower end of the plunger, is a manganese bronze casting. The gears are hardened and ground. The four-jaw clutch is made of 3½ per cent nickel steel, properly heat treated. The shift fork is a heat-treated drop forging. An ample factor of safety is had in the heavy duty type Strom thrust bearing. The approximate weight of the hoist is 390 lb., exclusive of the mounting parts.

#### Automatic Side-Dump Body for Ford Trucks

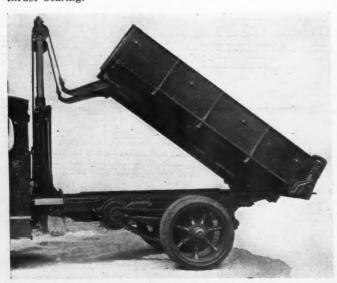
The Automatic Dump Car Co., South Bend, Ind., recently announced a new dump body for Ford trucks, which is identical in principle and construction to others of its line that includes bodies to fit 2, 3 and 5-ton chassis. The new Ford side dump body is described as being a rigid, strong and serviceable body for general hauling, and as an effective dumping unit. Its construction is said to be such as to outlive the truck on which it is mounted; it operates simply and, it is claimed, can be dumped easily without special exertion. When discharging, which operation is said to require about 11/2 minutes, the load is deposited three feet from the truck. The retail price of this body is \$250 f. o. b. factory, plus war tax.

The body is of all steel construction, being built of 10 and 12-gage blue annealed steel sheets, hot riveted and weld-

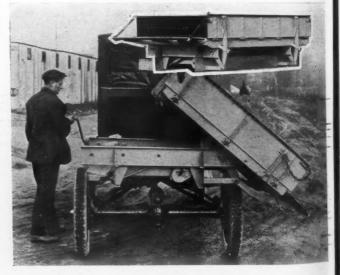
ed. Seams are eliminated as much as possible, and all rivets are counter-sunk to insure a smooth bed that will dump clean at every discharge. The frame is of channel section pressed steel, hot riveted and welded throughout and is well reinforced with cross members made of the same material. The arms and cams are steel castings and forgings. As the body is attached to the chassis by special fastening accessories, which are furnished regularly with the body, the need for drilling is eliminated. The simple but effective method employed for securing the body to the chassis is said to be such as to enable its mounting in less than an hour's time.

The gears of the hoisting mechanism are cut from steel and are claimed to permit a smooth and easy operation of the dumping mechanism. Bronze and steel bearings are used throughout and, as they are stated to last as long as the body, there is no need for replacements.

Views of the Automatic Side-Dump Body.



Showing Position of Hoist When Raised for Discharge.



The body, which is 54 in. wide, 78 in. long and 12 in. high, has a capacity of 1 cu. yd. The loading height, measured from the ground to the top edge of the body, is 52 in. The weight, complete, is 700 lb.

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# TRUCK EQUIPMENT AND APPLIANCES











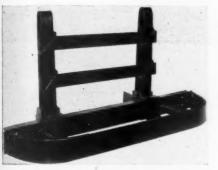
#### Bell Safety Motor Truck Bumper

A truck bumper that is claimed to not only save the truck from damage but reduce the danger to pedestrians from collision as well, are the objectives of the new Bell Safety Bumper, manufactured by the Bell Safety Bumper Co., 1332 56th St., Brooklyn, N. Y.

A rugged 4-in. wide channel spans and overlaps both ends 4 in. To this channel are attached two 15-in. flatiron arms, secured by wrought steel hinges. Supporting these arms are two 8-in. hardened coil

and shaping up the various heavy sheetmetal parts entering into the construction of trucks is at the command of this company's plant. The specialty work of this concern is the making, shaping and producing of almost anything in heavy sheetmetal work, specializing on dash fronts, hood sills, hood ledges, running boards, floor boards, toe plates and every other part required in heavy stamping.

In the assembly of a truck, every part should harmonize with the general construction. This is the policy that is not only advocated but practiced.



Safety Motor Truck Bumper Protects the Truck and Reduces Serious Pedestrian Accidents

springs. Tightly stretched over these arms, running from end to end, is an unbreakable many-ply weather resisting fabric belt—the whole making a device that will withstand any kind of shock and cushion the impact on collision, eliminating danger to the truck and its mechanism.

The radiator guard, built in combination with the bumper, is made of spring steel and its rugged construction is claimed to be a guarantee of safety for the radiator from all damage by collision with other vehicles.

The makers claim that the bumper will withstand any impact.

#### Hotchkiss Sheet Steel Products for Commercial Cars

The activities of the Hotchkiss Steel Products Co., Inc., Binghamton, N. Y., as coupled with the motor truck industry, is devoted largely to the making of those parts involving sheet steel of such design and construction as to make the trucks to which they are to be assembled attractive and substantial. Basing a large percentage of the attractive qualities of a completed truck on the general appearance of the dash and the cab, two of the most noticeable parts, this company has expended special effort toward the manufacture of products that will make these particular parts attractive on a truck.

Every facility for the stamping, forming

#### Tip-Top Oil Cups

The Tip Top oil cup, manufactured by the Bloom Flusher Co., Tiffin, O., and exclusively distributed by Charles S. Monson, Detroit, Mich., is a cup of standard design and not automatic in action. It is constructed of die cast aluminum, carefully machined and finished. A springretained, self-seating cap, which may be tilted to any angle, permitting the cup to be filled from any side, is the feature of this cup.

As may be seen from the accompanying illustration, the cap is anchored by a piano wire wish-bone spring which is caught under an edge of the body of the cup, recessed for that purpose. This secures the cap securely, and the umbrella shape eliminates the possibility of entrance of foreign materials within the cup. The action of the spring working in oil and the fact that it is not exposed to the weather is said to preclude the possibility of the spring rusting. The maker also points out that if the spring should break through accident it can be replaced.

The Elbow cup is constructed on all lines identical to that of the straight cup. Its special feature, however, is that the bowl is below the center of the drain hole which forms a reservoir. After the cup has been filled the bearing is flushed with oil and gradually drains and feeds the bearing. It is said to effectively lubricate the bearing for driving of from 500 to 700 miles.

The Tip Top cups are offered in three models, namely, A-1, A-2, A-3. The Briggs standard ½ in tapered pipe thread is used regularly.



Sectional and Cap and Spring Assembly View of the Tip-Top Oil Cup

#### Electric Heater for Quick Starting

The Crone Electric Heater is an auxiliary heating device designed to facilitate the turning over of an engine in cold weather. It is manufactured by F. G. Crone, 281 W. Ferry St., Buffalo, N. Y. This device heats the radiator or va-

This device heats the radiator or vaporizing systems by an electric resistance coil, giving it an equal distribution of heat. It heats the coil in the vaporizer and when hot, holds the heat for a short time. When the engine is started the mesh in the heater has a spreading sur-



The Crone Heater Heats the Intake Pipe, Facilitating the Starting of a Cold Engine

face of about 200 sq. in. or more for gasoline to vaporize on.

After the engine is started it is said to also aid in the vaporization of the gasoline, producing a drier gas, and affecting a saving of gasoline in addition to preventing backfire, as the fire cannot pass through the mesh.

The flanged or screw-threaded body fits between the carburetor or intake pipe. In the body are brass tubes and between the center and outer casting is a resistance coil of high heating test wire, which heats the tubes. It is operated from a storage battery and is controlled by a button on the dash.

#### White Mule Patch

Features of the White Mule Patch, made by White Mule, Inc., Carbondale, Ill., are its heat resisting qualities and the use of pure gum in the making of it, according to statements by the manufacturer.

It is stated to withstand 212 deg. of heat and that no compounds are used in its make-up. Fifty-four sq. in. of patching rubber is contained in one container which sells at \$1, and is known as No. 01. The kit includes rubber, semicured gum for cementing, and a metal buffer. The No. 02 outfit contains but half the amount of material contained in the No. 01.

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#### New "GreesGun"

A new product of the Ireland and Matthews Mfg. Co., Detroit, Mich., is a "GreesGun" which recently made its appearance on the market. This lubricating device is designed to permit easy operation.

The body of this gun is drawn from steel and finished in nickel. The cap at the lower end permits of the filling of the gun by piston action. This construction of filling provides a clean and easy method.

The fact that the lower part of this gun swings through almost a full circle makes the getting in into inaccessible



Ireland & Matthews GreesGun
The joint at the lower end of the gun allows the gun to be moved practically through a full circle

places less difficult. The capacity is sufficient for a number of greasings before refilling is necessary.

Nipples are furnished in several styles and threads, including straight 90 deg. and adaptors for spring bolt integral grease cups. All these nipples are made with ball check valves so that the grease can be left in the bearing under pressure. The balls form a tight joint, eliminating the need of dust caps. The grease gun is also provided with a check valve, so that it is unnecessary to relieve the pressure in the gun before breaking connection with the nipple.

The locking device between the gun and nipple is positive and simple, requiring only a quarter turn to lock and unlock, yet holds tightly so that it will support the weight of the gun.

#### The Weaver Rim Anvil Helps Straighten All Rims

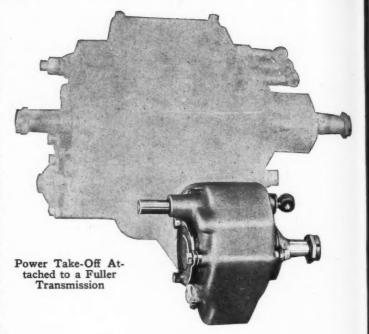
A new anvil designed to be of material assistance in straightening out the kinks in a rim of any make has been added to

the Weaver line. This line, which includes equipment for repairman and shop, is manufactured by the Weaver Mfg. Co., Springfield, Ill.

This Rim Anvil, it is claimed, will accommodate all types and sizes of rims. It is a solid block of gray iron with a variety of grooves and bases to accommodate all types of rims. Two hand tools to use in opening up grooves are part of the equipment.

This device is fastened to the bench by a heavy bolt, passing through an open-

through an opening in the anvil. There is a flange on the bottom of it to insure its proper mounting. It can also be used for riveting brake bands in place.



all Fuller transmissions have an opening provided for mounting Fuller power takeoff by removing the stamped steel plate and bolting the power take-off in its place.

#### Fuller Power Take-Off

Fuller & Sons Mfg. Co., Kalamazoo, Mich., have perfected a power take-off which attaches to the transmission. This operates at motor speed. The power thus available may be used in many ways. One of the most useful installations for the farmers is to use the power take-off to run a power belt pulley which will operate various types of farm machinery.

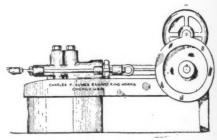
The installation is very simple. A straight shaft is connected to the power take-off and run back underneath the frame to the rear end of the truck, at which point the pulley is attached. This is always in place and ready for use. Plenty of clearance between pulley and body is provided. The pulley does not turn except when the gear is shifted into the power take-off position.

Another useful installation is using the power take-off to operate a winch. By its use the power is transferred to a slowly revolving drum around which a rope is wound. One of the smaller sizes of winches will exert a ton pull. It can be utilized in pulling machinery out of bad places, and with block and tackle for pulling stumps. It operates hay forks, stretches cables, loads logs, and numerous other useful jobs.

There are many special trucks which will be worked out with the power take-off available, for instance, well drilling, machine and post hole diggers. Nearly

#### Hydraulic Pressure Pump

The Charles F. Elmes Engineering Works, Chicago, Ill., is marketing a high and low pressure pump designed to be operated from a ½ hp. motor at a speed of 100 r.p.m. This pump gives a pres-



Elmes High and Low-Pressure Hydraulic Pump

It will give a pressure up to 5000 lb. per sq. in. on the high-pressure plunger and up to 250 lbs. on the low-pressure plunger

sure up to 500 lb. per sq. in. on a high pressure plunger and up to 250 lb. on a low pressure pump.

A feature of this pump is that it is automatically arranged to shift from low to high pressure when the limit of low pressure has been obtained. This construction enables the pump to raise the ram of the press up to its work on low pressure with considerable speed and as soon as the ram reaches its work and the resistance is increased, the amount for which the low pressure plunger has been set, the automatic valve lift will permit the high pressure plunger to continue the working stroke of the ram.

The pump is divided with a 1½ gal. tank for oil or water and has a motor direct connected and mounted on a frame, as shown in the accompanying illustra-



The Weaver Rim Anvil, a New Piece of Equipment to Straighten Kinks in Rims of All Styles and Sizes

#### Buko Can Oiler

The Buko sure shot pump can oiler, put out by the Byko Oiler Mfg. Co., Alarkson, Neb., is designed for practically all the uses for which a can oiler is required in a garage or repair shop. It is of a convenient and practical size.

This oiler has a removable screw bottom, making all parts accessible for clean-



The removable bottom makes all working parts easily accessible for cleaning. From one drop to one-eighth of a pint can be delivered in one stroke.



It is of standardized construction and holds 1½ pt. of oil. It is fitted with a 12-in. copper spout which is leakproof and bendable to any position. Any amount of oil ranging from one drop to one-eighth of a pint, an amount sufficient to fill a large size oil cup, can be delivered with one stroke. It is quick and easy acting, self-priming and will deliver any grade of lubricating oil.

#### New M. & E. Clutch and Universal Joint

Two new products have recently been added to the line of the Merchant-Evans Co., 21st and Washington Ave., Philadelphia, Pa. These are the new universal joints for oil and grease lubrication and the new multiple dry-disk clutch.

The accompanying sectional view of the M. & E. universal joint shows the means taken to make this joint oil- and grease-proof. This joint is also featured by a small number of parts and by the strength of the working members. The bearings are also of sufficient size and

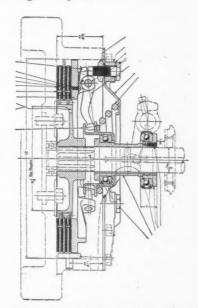
the working limits are close. This joint is produced in four standard sizes.

The oil bath is stated to give long life and, it is also claimed, will use less lubricant than is usual. A leather sleeve is furnished when the joint is designed for oil lubrication. It will be noticed that in the event oil or grease manages to get beyond the leather sleeve an additional washer prevents it from escaping entirely. The four points at which the washer retains the lubricant is clearly shown in the illustration.

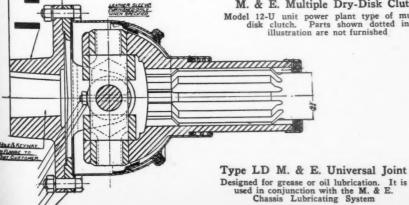
The new M. & E. multiple dry-disk clutch is made in 8, 10 and 12-in. sizes and designed expressly to fit standard flywheels of all engines, also to fit into all the S. A. E. standard units, power plants and bell housings.

One of its features is an adjustment scheme which makes adjustment easy and gives the same adjustment on all three adjusting levers.

This clutch has a large disk area together with low spring pressure, making it smooth acting. Materials are all properly heat treated where necessary and wearing surfaces are hardened to resist wear. The accompanying illustration shows a cross section of the clutch with its plates and linings, release bearings, ete. To adjust it is necessary to release the adjusting ring bolts, turn the adjusting ring clockwise or down one step and then tighten up the bolts.



M. & E. Multiple Dry-Disk Clutch Model 12-U unit power plant type of multiple disk clutch. Parts shown dotted in illustration are not furnished



#### Universal Battery Connector

The Rosier-Howard Corp., Hutchinson, Kans., is marketing a universal connector designed particularly for service station use. It permits the connection of a rental battery to any truck or car regardless of the type of table terminals with which the vehicle is equipped.



Benson Universal Battery Connector It is made in three sizes for positive and nega-tive taper post and straight-post models

This connector is manufactured in three sizes and is so designed to permit various methods of connection. It is constructed of a high grade of bronze metal coated with lead.

No. 1-P is designed to fit positive taper posts, No. 1-M negative taper posts and No. 1-S either positive or negative straight posts from 3/4-in. to 13/16 in. in diam. The list price is 70 cents each.

#### Racine Signal Whistle

Racine Accessories Mfg. Co., Inc., Racine, Wis., is manufacturing a whistle known as the Racine signal whistle. For engines of overhead valve construction a special spark plug attachment is provided



Racine Signal Whistle It is constructed of aluminum and bronze with nickel-plated finish

which permits the use of a special spark plug in addition to the whistle. whistle is made of aluminum and bronze and is nickel-plated. It sells at \$3.50.

#### Climax in Active State

Reports from the Climax Rubber Co., the factory of which was recently purchased at Delaware, Ohio, shows the company to be in active condition. The firm is now carrying on a publicity campaign for the purpose of marketing its product, the Climax compression tube.

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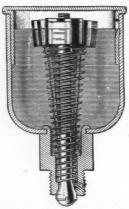
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#### Vibra Automatic Oil Cup

The utilization of the energy of natural forces or vibrations of moving machinery is the basis upon which the Vibra automatic oil cup is constructed by the Vibra Oil Cup Co., 1426 Vine St., Philadelphia, Pa.

The valve at the bottom of the air outlet (refer to the accompanying illustration), is controlled by an inverted pen-



Cross-Section of the Vibra Automatic Oil Cup. It is Energized Through Vibration

dulum which eliminates the necessity of resorting to jolts or shocks to open the valve. A bayonet cap prevents the cup from becoming air-bound, as it allows sufficient ventilation. Sediment deposits can be avoided by pressing the inverted stem with the end of an oil can when filling the cup.

The flow of oil can be regulated by screwing a weight on the stem either up or down, increasing or decreasing the tension of a spring through which the stem passes. In this manner the lubricant may be fed from the cup freely or sparsely. The flow of oil is automatically cut off when the machine is not in motion because the inverted oscillating pendulum is then held by the spring in a central position which closes the valve.

This oil cup, which has a capacity of ½ oz. of oil, will lubricate truck steering knuckle pins or spring shackle bolts from three to five hundred miles. The ½ in. pipe thread makes this cup interchangeable with other cups. Sells at \$1.

#### Nu-Way Dust Cap and Nut

The Nu-Way dust cap and nut, put out by the A. L. Just Mfg. Co., Syracuse, N. Y., is a split nut and cap combined dust cap. This device is stated to supplant the conventional cap in that it does away with screwing the dust cap the full length of the valve stem.



Nu-Way Dust Cap and Nut
Eliminates the hexagon lock nut. It consists
essentially of a split nut and the cap

When a nut is split it allows clearance so that it can be placed over the stem until it reaches the base when a downward push engages the stem threads and a turn or two securely lock the cap and nut. This device also does away with the hexagon lock nut. It will fit any make truck or car and is marketed at 75 cents per cap, or \$3 per set of four.

#### Hobbs Storage Battery

The line of storage batteries being marketed by the Hobbs Storage Battery Co., Los Angeles, Cal., is produced in all the sizes required by different makes of trucks and passenger cars. This line is also adaptable for tractor service.

The box of a Hobbs storage battery is of selected oak, having dove-tailed corners and thoroughly impregnated with acid-resisting paint. The handles are of extra heavy steel, lead-coated and finished in baked enamel. To insure minimum resisting the connectors are made 50 per cent over size.

The vent plugs are of special design and are easily removable, permitting ready access for inspection. The vent opens up into a large gas chamber which provides ample ventilation. The hard rubber cover provides a smooth, clean finished surface tending to eliminate current leaks. The inside cover is of dis-



Hobbs Storage Battery

tinctive design and provides together with the top cover a double sealing space, thereby preventing loose posts and acid seepage. The jar is of extra heavy semiflexible rubber carefully inspected under a 35,000-volt test.

The negative plates are hand packed into a grid of the lock type. The active material of this plate is said to be so designed chemically as to require less current and proportionately less time to charge. The positive plates, which are of the improved locked type, are also hand packed.

The selected wood separators are treated by a special process to remove the impurities and toughen the fibre, insuring maximum porosity and service.

Hobbsulation, an exclusive feature, is a specially prepared acid-proof material employed to prevent short circuiting of the plates at the base. The wood hold-downs, which prevent the upward creeping of the separators, are of extra broad surface hard wood. The extra large acid space provided for the electrolyte greatly reduces the danger of exposed plates and excessive heat.

## Bassick Compressor Filler and Grease

One of the products recently introduced by the Bassick Mfg. Co., 361 W. Superior St., Chicago, Ill., is a device that facilitates the filling of a grease gun. It is known as the Bassick Compressor Filler. This concern also manufactures a grease that is claimed to be entirely free of foreign substances, and that will main-



New Bassick Product
Showing the Bassick method of filling grease gun

tain and retain the same consistency and quality throughout the entire year, not

being affected by change of temperature. The Bassick Container and Filler, which can adaptably be used in connection with the Alemite grease gun, consists, primarily, of a metal disk having a hole in the center to receive the grease gun. To fill, first the cover is removed from the gun, then the gun is inverted and inserted into the opening; when this is done pressure is applied, which forces the grease up through the center hole and into the gun. This method of filling the gun is said to save time and grease and keep the hands clean.

#### New "Master" Piston Ring

One of the new piston rings recently exhibited at the A. E. A. Show was the "Master" Ring, manufactured by the Prescott Auto Parts Co., Webster, Mass. This new ring is a one-piece ring with two grooves cut in its face, cutting away part of the bearing surface and thus establishing two large oil reservoirs. The purpose of this is to prevent the escape of gas and leakage of oil into the cylinder head, thereby increasing compression and reducing carbon formation, respectively. The friction is also stated to be considerably decreased by this film of oil. This ring is made of pure cast iron and is lathe turned.



New Piston Ring
The two grooves of this one-piece ring provide
two reservoirs

#### Battery Water Level Indicator

The Hempy-Cooper Mfg. Co., Kansas City, Mo., recently introduced a new appliance that will keep the driver informed at all times as to the exact water level of a storage battery. It is known as the Batometer and is distributed by the Fairbanks Co., New York City. This device can be attached to any make truck or passenger car.

The Batometer consists primarily of a water scale or gage, two flexible wires with connecting lugs and two lead electrodes which are built in the pillar caps



Batometer

Attaches to the dash within convenient view to driver. From it the electrolyte level of the storage battery can be immediately determined.

of the battery. These electrodes project into the cells at a point almost to the top of the plates. When the electrolite is high it is so indicated on the gage and when it falls below the ends of the electrodes the circuit is broken, causing the dial of the meter to register at the graduation marked "low."

When the condition of the battery is indicated as "low" it is an advance notice that the electrolite or water is in need of replenishment and that it should be attended to within 24 hours.

An ammeter is provided in combination with this indicator in the same case, making possible the substitution of a standard ammeter for a combined ammeter and water level indicator. Retail price of this device is \$12.50 attached.

#### Hubco Replacement Rim Parts for All Makes

In bringing the Hubco replacement rim parts before the attention of the trade it has been the aim of the Baltimore Hub Wheel & Mfg. Co., Baltimore, Md., to make a part of the properly annealed malleable iron and of the proper size and dimension that will eliminate annoying squeaks and, moreover, that will be unaffected by weather conditions.

By properly annealed malleable iron it is not meant that these parts are so hard that they will wear away the rims, which are also annealed, but that they

are annealed to a point that make them especially serviceable without harmfully affecting the rim.

There are many commercial cars on the streets and highways that squeak and are permitted to continue to squeak because their owners don't know what the trouble is. Some blame it on the wheels, some on the clamps and parts. But in the majority of cases it is either wrong equipment or from using parts that are not properly annealed.

Hubco replacement rim parts, which are electro-galvanized with a heavy double coating that is said to resist rust, are claimed to remove the squeak. These parts are sold and handled in a way that eliminates the possibility of getting the wrong equipment. All jobbers and dealers who handle this line are provided with specification sheets which show what makes of trucks and passenger cars use the different stock numbers. The prices range from \$15 to \$35 each.

#### New Gasco Two-Stage Air Compressor

The Gasco Mfg. Co., Lancaster, Pa., has added a new two-stage 2 cylinder air compressor to its line. It is known as the Gasco two-stage twentieth century air compressor. It is electric motor driven by a belt-driven outfit. Its capacity is suitable to the needs of the average garage, as it is capable, with a ½ hp. motor, of developing a maximum pressure of 200 lb.

Air is forced from the large cylinder through a cooler or radiator to a smaller cylinder, from whence it is forced into a tank. The cylinders in the crankcase are cast integral and perfect alignment is assured, as this casting is machined in one operation. The yoke connection of pistons results in a three-piece construction.

The drop forged crankshafts, which are 1½ in. diam., and the drop forged connecting rods are accurately machined and ground. The crankshaft end of the connecting rods are babbitted and shimmed. The piston pin has an interchange-

able phosphor bronze bushing. The main bearing, which is also phosphor bronze, measures  $2\frac{1}{2} \times 2$  in.

This unit comes complete with all the necessary accessories. It is so constructed that the air tank is beneath and the motor compressor and the valves above. One of the features of this compressor is that its construction affords ready access to the bearings. The cylinders are 3 in. and 11/2 in. with a 3-in. stroke. The speed is from 200 to 250 r.p.m. The air tank is 16 x 36 in. The equipment includes 25 ft. air hose and an air chuck. This compressor covers a floor space 19 x 40 in. and is 43 in. high. Shipping weight is 475 lb.

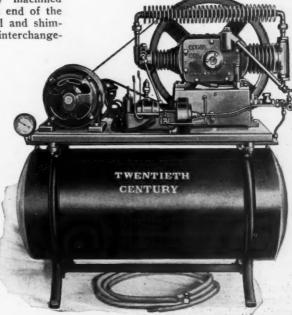
#### Mirete Metal

A metal that will promptly unite aluminum, copper, brass and white metal in repair work is the product of the Mirete Co. of New York, Inc., 242 W. 52nd St., New York. It is known as Mirete metal and is a composition of metals. Its uses involves the low heat process, which requires a temperature of about 400 deg. Fahr.

If the aluminum to be tinned or repaired is covered with a greasy substance it should first be completely burned away with a blow torch and then washed with a clean gasoline moistened cloth. In order to assure a strong bond a "V" bevel of about 45 deg. should be filed on the outside edges of the broken parts, the parts are then heated so that the Mirete metal when applied will coat the surfaces thoroughly. It is applied by rubbing the bar on the heated surface, pressing it onto the surface with a heated scraping iron while continuing the heat and by scraping the Mirete back and forth over the surface. If this process is carefully adhered to every vestige of oxide formed will be removed and the Mirete will secure a firm grip into the pores of the aluminum opened by the heat. All aluminum oxide must be removed by the application of Mirete with the scraping iron to secure a permanent bond.

Surfaces to be bonded are heated until the Mirete applied in the tinning operation is almost a liquid, then with the aid of the heated scraping iron Mirete is filled in little by little, puddling it into cracks and working continually to avoid air holes, at the same time maintaining the Mirete in a semi-liquid form or paste. The Mirete used to fill in unites with its own kind and naturally bonds securely. It can be puddled with great ease.

All jobs should be allowed to cool naturally and clamps should not be jarred or removed until the work is completely



Gasco Air Compressor Outfit

The Twentieth Century Air Compressor Outfit, by which it is more commonly known, is of the two-stage type and is a complete automatic motor-driven unit, mounted on a steel tank.

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# SERVICE AND REPAIR DEPARTMENTS



Conducted by C. P. SHATTUCK

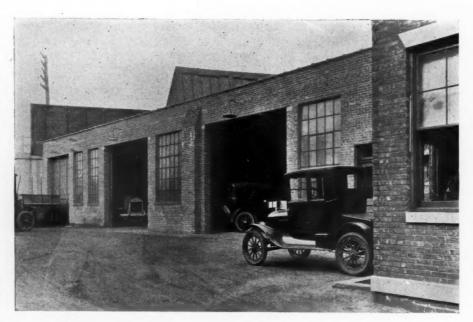
# Capitalizing a Forty Years' Reputation

Maccar Agent in Newark, N. J., Formerly a Wagon Builder, Experiences No Difficulty in Upholding Reputation Gained in Past. Mr. Rehberger Says That Service Must be the Foundation of Any Business That Hopes to be Successful

NE of the most successful types of dealers, and appreciated by the truck manufacturer who is fortunate enough to obtain him, is the old - time carriage and wagon builder. Generally founders of the business are suc-ceeded by their sons, and frequently it will be found that the father retains an interest, although not necessarily an active one. The writer has come across a number of wagon builders who, finding their customers discarding the horse for the more efficient mechanical transport, have turned

to merchandising and servicing motor trucks. In Maine the writer noted one old-time carriage concern selling and servicing trucks, and he was told that the company practically has a monopoly on truck sales for a considerable radius.

Another example is the firm of Arthur Rehberger & Son, Inc., 320 Ferry Street, Newark, N. J. "Ed," as the employes speak of him, is the son, and appears to be a chip off the old block. He runs the business, but his father is interested and there is no doubt that the success of the



Entrance to Service Station of Arthur Rehberger & Son, Distributors of Maccar Trucks in New Jersey

Plans are being formulated for an extension, which, when completed, will occupy the greater part of one acre of land

company, particularly when the concern was getting its experience in the truck field, is, in a measure, due to the counsels of the elder Rehberger. The employes tell an interesting story, and not without a little pride, of how the elder Rehberger made his start in business on the large salary of \$7 a week as a blacksmith's helper.

That was approximately 40 years ago, before the HCL attained any such proportions as it has the past few years. But, it was not long before the elder Rehberger

mastered the wagon building and blacksmith business, and hanging out his shingle, he began to build up a profitable and growing business.

The bulk of his business in the last few years, or before trucks were handled, was with the commission houses of Newark and with the market garden farmers for miles around Newark. To this day, they say, will be found wagons built by Mr. Rehberger, for in those days honest material and labor entered into the product and the painting job was a real one.

The same carefully dried and season-

ly dried and seasoned lumber and hand-forged metal work or fittings are incorporated in the truck bodies built by the company, the details of which are looked after by the son. It is interesting to note that in the wood, blacksmith and paint shops there are men of middle age who learned their trade with the elder Rehberger and are still with the company.

It may be argued that the cost of the custom-made body to the purchaser is higher than the standard types or those produced in quantity. That is very true,





Left: The Maccar Demountable and Unit Power Plant, a Feature of the Service. The Unit is Loaned the Customer and Reduces Idle Time to the Minimum. Right: A Fourteen by Two-Inch Grinder and Stock of Wheels is Among the Machinery, and Use of Grinders is Increasing Rapidly in Truck Service Stations.

and particularly so when constructed as the Rehbergers build them. However, it is surprising to note the large number of business concerns which appreciate a good body and a high-class paint job. It may be a high-grade clientele, and it is. But such a class of customers is less likely to haggle over prices and service than the purchaser who looks at price.

The body building was responsible to a great extent for the Rehbergers entering the truck business. When the old-time customers replaced their horse-drawn equipment with trucks, they naturally turned to the Rehbergers to construct the body. Past experience had taught them the value of good designs, honest material and workmanship. So for some time building truck bodies kept the plant operating. In the meantime the horse-drawn vehicle business declined, and it was only a question of time when the demand would not warrant operating the plant at a profit.

#### How They Got Into the Truck Business

Very frequently the trade would ask the Rehbergers about trucks, seek advice as to what type, capacity and make was best. The company was neutral until the younger Rehberger decided it was time to analyze the truck business. So he began studying trucks. One day an old customer insisted that he accompany him to look at a chassis and the result was that the young man become sold on the make. It was a Maccar.

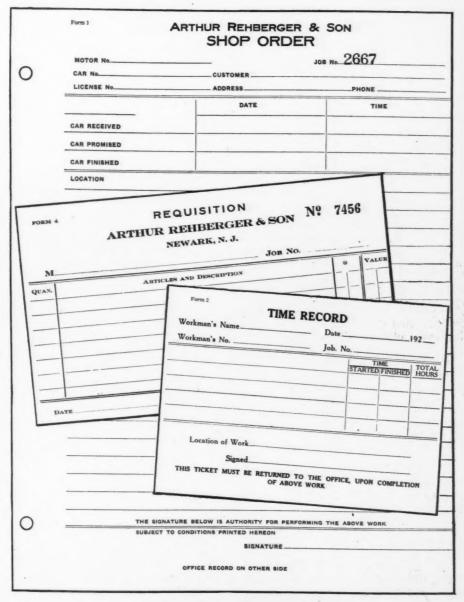
Shortly afterwards a sub-agency was taken for the Maccar and the venture proved so satisfactory after a year's trial, that an agency was awarded. Continued success, in both sales and service, led to the Maccar factory appointing the company distributor and awarding Northern half of New Jersey or about 10 counties.

With the development of the business the company erected a brick service station capable of servicing a large number of trucks and storing many more. The service station building includes the office of the company and is at the rear of the building employed for storing the body material. Therefore, should the reader be in Newark and desire to call on the

younger Rehberger, do not allow the building on the street to influence you, but walk through the alleyway to the office and you will receive a gracious welcome from Ed Rehberger.

#### Cleanliness in the Repair Shop

The service building is of brick and cement, with the repair shop at the rear. The front space is employed for storing the new chassis and is separated from the repair shop by a partition so arranged that there is good ventilation and light for the workmen. Large skylights are cut in the room and the feature that appealed to the writer was that both the main room and repair shop was scrupulously clean. It developed that cleanliness is a hobby with the younger Rehberger and as you enter the service station you will be confronted by large white letters on the black partition that spell cleanliness in shop and employes. They say that Ed Rehberger will notice a match dropped on the floor.



Forms Employed by the Rehberger Establishment

These illustrations show the Time Record Slip used in conjunction with a time clock; the Requisition Slip necessary to obtain parts, etc., and the Shop Order or authority for performing any given work. The Shop Order is made out in triplicate, and all bear the same serial number. On the reverse side of the Shop Order a record is kept of labor charges, outside repairs, material and parts used.

Over the service manager's desk are a number of bulletins which are well worth reading, for they teem with good suggestions to the workmen and employes, as well as make for better shop conditions and better work. The repair shop is well equipped with engine stands, drill press, grinder, etc., and in one section, mounted on stands with rollers, were a number of the Maccar demountable or removable power plants which comprise the complete power plant, dash, steering gear, clutch and transmission, one of the features of the Maccar trucks.

The hoods of these units are suitably lettered, as may be noted by an accompanying illustration. They are loaned the customer, are quickly installed, and avoid the possibility of delay when the power plant, clutch, gearset or steering gear, etc., require repairs that will lay the truck up for any great length of time. This is one of the service policies of the company as is held to be a great advantage to the salesmen in merchandizing motor highway transportation.

This brings us up to C. B. Baldwin, the sales manager. If there is a man who eats, sleeps and talks more truck sales, service and dealer problems than Mr. Baldwin, why, the writer has yet to meet him. I took lunch with Mr. Baldwin and finished my dessert before he reached his entree, so busy was he discussing sales problems and salesmen. He's a live wire and has a keen insight in the development of the truck industry. Among the many remarks he made, and which showed he appreciated the changed conditions in selling, was that the salesman who could not analyze the prospect's business, be a student of psychology and sell the work that the truck does, was doomed to be relegated to the ranks of the house to house canvasser. Mr. Baldwin has but one real grievance, and that is the failure of the public to appreciate the fact that to sell a \$5,000 piece of mechanism required high-class salesmanship. "In the past it was a case of getting the trucks. Now you have got to really sell," he remarked. And the trucks are being sold despite the alleged slump in business.

#### Loans Stock Bodies to Customers

Mr. Baldwin finds that the ability to supply high-grade made-to-order bodies is a great asset in sales. Due to the years of experience in body designing, and coupled with truck experience, it is possible to intelligently advise the purchaser of a chassis in regard to a body that will best meet his requirements. Having charge of their own body plant also enables the company to see that a body goes through on time and is correctly mounted, a most important factor, as sometimes the mounting is slighted by the body concern when pressed for delivery by the dealer.

There is another profitable angle and that is the usual delay in securing the custom-made body is eliminated to a great extent, as the company carries in stock 10 bodies such as rack, box, stake, etc., and one of these is loaned to the customer until his body is completed. This enables the company to deliver the chassis, and



A Wellman-Seaver-Morgan Tire Press is a Part of the Equipment

obtain their money. Usually the dealer has his money tied up until the body is delivered, and the greater the volume of business the larger the investment. Loaning a body also permits the paint shop to do a nice job on the ordered body. The operation of a body plant has proven a great asset to sales and the plant is profitable.

#### Trucks Are Carefully Checked Over Before Being Sold

The service policies do not vary from the conventional. Mr. Rehberger believes in keeping the trucks on the road and not in the shop. When the new chassis is received it is gone over very thoroughly by the expert mechanic, who tightens up all loose bolts, checks the lubrication supply, etc., and tests the chassis on the road. On his return a report is made out and

if the operation of all units is not satisfactory the service head is notified. Any fault is corrected and a record is maintained of the trouble, labor charges, etc. This is a practice that is increasing among the larger dealers who realize that the human equation must be considered, as it is possible for a part to get by the inspector or the factory employes may have slighted their work. If we are to believe the trade there has been more or less of this during the past few years, when the demand exceeded the supply.

One of the features of service, and it is free, therefore, it is not service but a is the making of minor adjustments, grinding in valves and removing carbon for a stated period. Another feature is the service truck designed and constructed by the company. It is mounted on a Maccar chassis and is an unusually fine job. A complete description and illustration will appear in the June issue of The Commercial Car Journal, the special service number of the year.

The company carries a large stock of parts and the plans for an extension to the building provides for a model stock room. The company owns about one acre of land and as soon as building conditions

warrant will construct an addition. Unlike many dealers each department is separated and under a head. Each department is charged its share of overhead and is credited with all work performed. The service department is credited for all labor, etc., connected with the new truck or service rendered and this is charged to the sales department. Mr. Rehberger admitted that this service department or repair shop did not break even, that it was operated at a loss. In this connection it should be stated that the shop is not credited with the profits made on parts and is operated on a pure labor basis. While a night force is not maintained certain employes can be called, should a customer require service. In addition to the large service truck, this company employs an emergency wagon and a truck for towing.

## Chamber of Commerce Analyses Overhead

" OW to Distribute Overhead Expense in Good and Bad Times," is the subject of a bulletin issued today by the Fabricated Production Department of the Chamber of Commerce of the United States.

"Our cost systems are too inflexible," the bulletin says, "under ordinary cost methods, still largely in use, overhead expenses are spread too thin in times of forced production and massed too heavily in periods of slight demand and output, giving in the latter case costs that are artificially high and unfair to the public and moreover costs which the market will not generally sustain.

"Costs systems should provide that these expenses, usually designated as overhead expenses, should be pro-rated on the basis of a normal year—the 100 per cent mark on the business thermometer. Thus in time of unusual pro-

duction, production exceeding normal, the overhead should be more than used up in costs, and a surplus out of overhead cost created to take care of those times when the output is below normal, and the overhead charges not fully cared for in the costs of that year."

In conclusion the bulletin says that the treatment of overhead in the way indicated is not a panacea for all our industrial ills. The control of overhead in a manner fair to the business men as well as the consumer is one step and only one step toward realizing more stable prices and eliminating those wild fluctuations that culminate in industrial depressions. Such a consideration also points out the moral that the hope of permanent reduction of costs rests in the greater, more continuous and more regular use of our industrial facilities.

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# How to Overhaul and Make Adjustment on Simplex and Duplex Engine Governors

HE following are the factory methods for servicing the Simplex and Duplex types of engine governors manufactured by the Duplex Engine Governor Co., Inc., Brooklyn, N. Y. If the governor fails to function satisfactorily after following the instructions herein given, it should be taken either to a factory-appointed service station or sent direct to the maker as the disassembly and adjustments require factory experience and special equipment for setting. As may be noted by illustration A and B, the governor is provided with seals and the breaking of any one of these

voids the maker's guarantee.
The directions for the cleaning
and care of the Simplex and
Duplex types are similar and
those dealing with the former

type will be given. The Duplex governors operate on the centrifugal principle, a set of weights operating and controlling the movement of a valve or grid located directly beneath a similar grid or valve seat, as it is termed. The governor is located beneath the carburetor and intake manifold, to which units it is bolted. It regulates or controls the supply of mixture to the engine; that is, it prevents the engine from exceeding that number of r.p.m. at which the governor is set, by the valve reducing the fuel

supply. The action of the valve is automatic and gradual. The governor also serves as an auxiliary mixing chamber.

The Duplex and Simplex types differ in that with the former both the engine and truck speed can be controlled, whereas with the Simplex either the engine or truck speed can be controlled.

The governor is a check on the carburetion. If there is surging, it may be the result of several causes. The mixture may be too rich, the valve seat of governor carbonized or dirty, lack of lubrication, drive cable not functioning properly or faulty ignition. The ignition system should be inspected before assuming that the fault is due to the governor and similarly

the mixture should be checked. Engine trouble, such as the use of too much oil and back firing will tend to deposit carbon and soot on the valve seat of the governor.

Assuming that it has been determined that the valve of the governor is not functioning smoothly, and examination is to be made, proceed as follows: Shut off the fuel supply to carburetor and at supply tank, and disconnect fuel line at carburetor. To disconnect drive, loosen casing ends, joints and casings. Remove cap screws, 4, securing governor to intake manifold. Lift off governor with carburetor attached, and slide cable out of gover-

GOVERNOR SEAL SEAL SEAL

The Simplex Governor, Showing Seals Which, if Broken, Voids the Guarantee of Maker

Provision is made for renewing the oil supply and removal of a plug permits draining old lubricant

nor. Remove cap screws, 5, securing carburetor to governor, and separate carburetor from governor.

There is a Vellumoid gasket between the governor and intake manifold and between the governor and carburetor. These are made by the company and if new ones are needed use factory gaskets. In replacing the gasket between the governor and intake manifold do not use any shellac as it will find it way to the valve seat, causing the valve to stick. Shellac may be used on the other gasket but it is not necessary as a tight joint can be obtained without it.

If the governor has been operated with too rich a mixture the valve seat may have the appearance of that shown at illustration D, and the seat proper the appearance of the valve seat shown at the right at C. And it may be that the grids will be carbonized or sooted and the valve not functioning properly. If found in such condition it is advisable to immerse the grid section in kerosene and allow it to stand some time to soften the deposits.

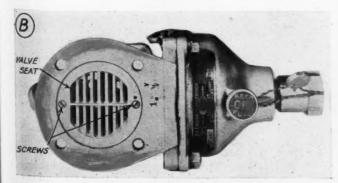
#### How to Remove Valve Seat

Before attempting to remove the valve seat lightly prick punch or mark the seat and body of governor or as shown in illustration B. This is necessary as the valve seat MUST BE REPLACED IN

ONE POSITION ONLY FOR IT TO FUNCTION. To remove valve seat for cleaning, use small screw-driver and remove the two screws securing valve seat to body. See illustration B. Remove valve seat. Care must be exercised, however, else the seat will be broken as it is constructed of an aluminum alloy. It is best to remove the seat from the top, not by inserting tool through opening of body at bottom for if this method be tried it will result in the valve or movable grid member being damaged or broken.

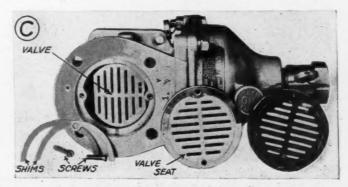
One or more shims will be noted beneath the valve seat and these should be laid carefully to one side. The valve

seat is now exposed. Clean valve and remove all foreign deposits with steel wool and similarly clean both sides of the valve Thoroughly clean both valve and seat before reassembling. Replace shims, aligning holes with apertures in body, insert valve seat, press home and replace screws. In replacing valve seat see that the screw holes align perfectly with those in the shims and body else trouble will be experienced in replacing the screws which have a fine thread. Set up screws tight but make sure that valve seat is pressed hard down on shims. It is quite important that the old shims be employed and that the factory set clearance between the valve and seat be observed. This clear-



Top View of Simplex Governor, Showing Top of Valve Seat and Perfectly Clean

The seat is secured by two screws and seat and body should be prick marked as indicated by the dots to insure correct replacement of seat



Showing the Valve (Lower Grid) and With Valve Seat Removed

A carbonized valve seat is shown besides the clean member. The valve seat shims and screws are also illustrated

ance varies according to the requirements of the governor. The setting is checked at the factory in a vacuum machine and cannot be calibrated by other than the factory service station or factory experts.

#### Testing Action of Valve

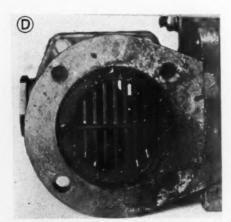
After replacing the seat the action of the valve should be tested. This can be accomplished by pressing the flay of a screw driver blade, or other similar tool, against the square nut on threaded member (bottom section of opening of body) and moving valve finger in a direction opposite to the cable and of governor. This will cause the valve to close. If there is any sticking it will be noted.

In replacing the carburetor on the governor flange or body the cap screws should be set up sufficiently snug to avoid the possibility of air being drawn in on the suction stroke of the engine. The upper gasket should be used dry for the reasons previously pointed out, and the cap screws set up tight. It is advisable to use new gaskets and these may be obtained from the factory service stations or the maker of the governor.

#### Inspecting Driving Mechanism

It is suggested that removing the governor for inspection and the work outlined above that an inspection be made of the driving mechanism as it may be that failure of the governor to function may be due to inoperation of these members. A simple test to determine if the centrifugal unit is functioning is to remove the oil filler screw on top of the governor (see illustration B) and marked "Keep Oil Full," and with engine operating note if the centrifugal unit rotates. If it does, it indicates that the governor is functioning and the drive as well.

If the governor has been cleaned and its action tested as above suggested, and the valve does not stick, examination should be made of the drive unit assembly. It may be that in the replacement of the drive unit that its tongued end was not properly meshed with the slot in the drive take-off shaft. A test of the drive may be made with the shaft disconnected and noting if it rotates. If lubrication has been neglected it may be that failure of the drive to function is due



A Close-up of a Badly Carbonized and Sooted Valve Seat. The Deposits Were so Thick That the Valve Did Not Function Smoothly.

Showing What Happened When an Attempt Was Made to Use Force in Removing the Valve Seat A tool was driven against valve (lower grid) which broke, of course. The valve seat must be removed from the top of the body.



to the pin shearing in drive gears. The design is such that the pin will shear under certain stresses, thereby avoiding the possibility of damage to the driving mechanism. The cable and drive unit is properly packed with lubricant at the

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factory, but the supply should be renewed with a good grade of cup grease, Gredag, or high-grade graphite grease.

Failure of the governor to function properly may be due to the fact that the Oldham coupling, between the power take-off and the drive unit, is not properly connected; that is, the male and female members are not meshed.

#### Lubrication Important

The best results will be obtained from the governor if the oil supply is renewed weekly. Remove the oil filler screw (see illustration A) and fill body until full. Use a medium grade of cylinder oil. The drive unit is provided with an oil cup and it should be filled weekly. Provision is

made for draining the old lubricant. This is accomplished by removing the oil drain plug (see illustration A). The old oil should be removed at least every 1000 miles of service of the truck and the engine run a few minutes with the plug displaced to drain all old oil.

#### Installing New Carburetor

If a new carburetor is installed it will require a special setting to obtain the best results with the governor so it is recommended that the factory service station or factory-appointed carburetor expert make the adjustment. In shipping a governor to a service station or the factory for repairs, etc., pack same carefully. It is not necessary to send the drive mechanism, only the governor. Spare parts for the drive mechanism may be obtained from the service stations of the company or direct.

#### China Has Many Automobile Possibilities

The automotive industry was well represented at a meeting of 200 export managers from all parts of the country at the Hotel Pennsylvania, New York City, March 7. The automobile industry received a goodly share of the export discussion.

Joseph McElroy, of Pass & Seymour, Syracuse, pointed out the necessity of protecting the American exporter of electrical goods. He said that German manufacturers were shipping goods in large quantities to South America and elsewhere and meeting credit demands there in an attempt to capture and hold trade. A very able talk was given by Tim Thrift, of the Motor Sales Co., on the advertising end of the trade.

Fred Chapin, of Bourne-Fuller Co, of Cleveland, said that one of the countries offering the largest immediate prospects was China. He cited the situation now prevailing where auto buses are supplanting jinrikishas in the cities. The prospects for road improvements in many sections of the country are most promising. "The market for automobiles brings with it a proportionate market for automobile supplies, rubber tires, gasoline, etc."

The delegates present were conscious of the difficulties confronting the business this year, but seemed confident that they could be overcome with hard work.

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# Service Station and Repair Shop Appliances

#### New Storm Reboring Machine

The new Storm "type M" reboring machine, which is now being offered to the trade by the Storm Mfg. Co., Minneapolis, Minn., possesses a number of unique features and advantages, making it specially adaptable to the needs of shops engaged in cylinder reboring of all kinds.

The main body, which is a one-piece, heavy casting, supports the boring bar, feeding and driving mechanism. The construction provides two heavy, adjustable bearings in which the boring bar operates.

The boring bar is hollow, carbon steel, hardened and ground, and has a travel of 14 in. It is actuated by cut spiral gears and the feed is obtained through a heavy, internal screw and upper feed gear, as shown in the illustration herewith. The bar supports the cutter heads.

The cutter heads are of the patented Storm six cutter type, which provide universal adjustment obtained by manipulating a center cutter adjuster. This adjustment permits their use in cutting to any desired size within the capacity of the

The machine is supported by a heavy base that is provided with clamp yoke and clamping device. It rides or floats free in this clamp and is self-centering. A valuable feature of this tool, it is claimed, is its adaptability to different methods of drive. It is regularly furnished with a connection for drill press, but is also furnished with pulley for belt or for motor drive. As may be observed from the illustration, the machine does not set directly in front of or over the drill press spindle, but, instead, sets to one side so that it does not interfere with the use of

the drill press for other work. Furthermore, it is back geared so that it may be used in connection with any ordinary 20 in, drill press.

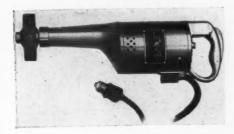
On other types, where the boring bar is driven directly from drill press spindle, a back geared drill press is used, as this is said to be the only arrangement permitting the obtaining of proper speed. Also, it is declared the combined height of the block and machine will not interfere with its use under any ordinary drill press.

Each machine is also provided with double end wrench for operating by hand so that it may be removed from the base and used for reboring engines without removing them from the chassis, by merely withdrawing two small pins in the clamping device.

The total capacity of the machine is from 25% to 6½ in., and its weight is approximately 300 lb.

#### Wodack Portable Drill

Several improvements are incorporated in the Wodack drill which is manufactured by the Wodack Electric Corp., 23-27 S.





Wodack Electric Drill and Grinder

Jefferson St., Chicago, Ill. It is produced in six sizes, 3/16, 5/16, 3/8, 1/2, 5/8, 2 speed and 3/4 in. The motor employed in this tool is of Wodack make and is of the series laminated type, self-adjustable in speed to the size bits used and operates on either AC or DC current. The construction of the switches is such as to result in quick make and break. It is located in the top handle and is operated with the palm of the hand; as the pressure is released the switch shuts off the current automatically, thus avoiding the chance of the drill running empty and at the same time insuring the

operator of having control at all times. Casing is of aluminum, gears of chrome nickel steel heat treated. Liquid type grease compartments for gears protect motor windings from any possible injury. Bearings, which are of SKF make, are self-oiling.

This company is also manufacturing a portable grinder equipped with the same type of control and motor. It is made in three sizes, depending on the wheel capacity,  $3 \times \frac{1}{2}$ ,  $4 \times 1$  and  $8 \times 1$  in. The motor used in this grinder is designed to withstand severe use and overloading. The same features which characterize the portable drill described above are incorporated in this portable grinder.

#### Inverted Arbor Press

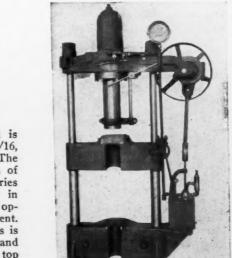
The 28-ton inverted arbor press being offered to the trade by the Hydraulic Press Mfg. Co., Mt. Galied, Ohio, is specially designed for forcing collars onto automobile crankshaft ends.

A recess machined in the sliding block which covers the "U" opening in the intermediate head fits the throw of the crankshaft. The intermediate pressure head acts as a bearing near the end of the crankshaft and, it is pointed out by the manufacturer, the pressure will not throw the shaft out of line, as it would were the bearing further away.

The head of the press is cast steel and the base cast iron. "U" leather packing is used for the ram and a rack and pinion is used to turn the ram.

The press is equipped with a gearless power attachment and belt driven pump which has a 5%-in. plunger and 3½-in. stroke. The press has a 6-in. ram, 4 x 26-in. platen, 45-in. daylight and 12-in. run. Strain rods are cold rolled machine with a shoulder on lower end of each to

support the intermediate pressure head.



Hydraulic Press, Twenty-Eight-Ton Model

Designed especially for the automotive trade. It has the No. 5-A gearless power attachment and class D belt-driven pump



Type M Storm Reboring Machine It is being centered on a Ford block. Belt-drive equipped

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#### New Electrical Test Units

Four new useful devices for shop use being marketed by the Service Products Co., Springfield, Ohio, are the models TF-4 and TF-5 Ford test units, universal piston vise, model 108 and model 103 Mica undercutter.

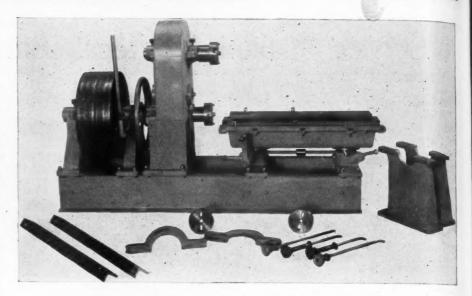
The model TF-5 Ford test unit is for the purpose of testing the Ford starting motor and generator units and component parts and is designed so that all metal constructions has been used. This model is furnished with a 1/3 hp. Universal motor that can be used on either AC or DC current, with speed range of from 500 to 3000. This speed is controlled by a rheostat.

This unit is furnished with tachometer, reading from 300 to 3000, volt meter range from 0 to 15 volts, double reading ammeter 30-0-30 and 600-0-600 and with a 6-volt battery. This unit is also fitted with a growler, which is integral with the vise that holds both motor and generator. This unit permits the testing of both motor and generator armatures. A test light is also furnished, permitting the testing of grounds and opens.

The model TF-4 Ford test unit is designed for use in service stations already provided with power. This model can be belted from an external motor or line shaft and gives speed range of 500 to 2500. This unit has been designed so that variable speeds can be obtained without stopping the unit and shifting the belt from one pulley to another. This model can be furnished with tachometer, ammeter and battery tachometer ammeter from 300 to 3000, ammeter, 30-0-30 and 6-volt battery.

By the addition of a brake arm and scale to this unit, starting motor tests can also be made. The ammeter furnished is not satisfactory for motor tests.

Universal piston vise model No. 108 is a tool that can be used on either mill or drill presses. The special jaws which are used for clamping vises and which are furnished with this machine are so constructed as to avoid any chance of breaking the rings. It is universal in its operation, taking pistons ranging from 2-in. upward in diam.



New C-O Universal Burning-in and Running-in Machine

Many new features of construction, designed to reduce operating time, are said to be incorporated in this new machine

The model No. 103 Mica undercutter, which is motor driven, is a unit for relieving the Mica between bars of all starting motor and generator commutator. It takes armatures up to  $6\frac{1}{2}$  in. diameter and shafts 19 in. long.

## C-O Universal Burning-in Machine

The latest announcement to the automotive trade, jobbers and garage repair men is that of the development of a universal burning-in and running-in machine, designed and built by the Canedy-Otto Mfg. Co., Chicago Heights, Ill. This company has also pioneered many improvements in forges, blowers, drills, motor stands and other repair equipment for garage work and the universal burning-in machine, which is claimed to handle any engine regardless of type or make, is the latest result of its efforts.

Only one attachment is required and this is needed only for burning-in valve in the head V-type engines. It is quickly attached and comes as part of the

regular equipment. This attachment will also handle engines which do not have detachable heads, an operation which has puzzled the repair man for many years.

Simplicity and flexibility are features. The table is raised and lowered by a single control. This table is grooved and the motor clamps can be adjusted to size of engine. The table also serves as a sump or crankcase for the motor, so that the crankshaft splashes in fresh oil, in every way similar to the actual performance of the engine in operation.

The clutch is an extra heavy toggle type, driving through a silent chain, which is so noiseless that the operator can test the timing of the engine or detect noises after the bearings have been run in.

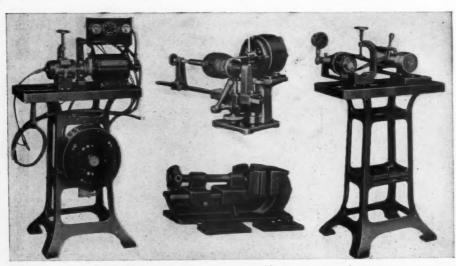
The machine requires a floor space of only 90 in. over all, with an actual base measurement of 79 in. 20 hp. is sufficient to run the machine to capacity under the most severe conditions, with the largest of engines. A single lever controls the raising and lowering of the table with a tension lock. All parts are highly machined.

The price has been established on a large production basis at \$635 f. o. b. Chicago Heights, Ill. A detailed illustrated bulletin can be obtained by any one who is interested by inquiring direct of the manufacturer.

#### Kunkel Valve Grinder

Among the new tools exhibited at Chicago was the Kunkel Valve Grinder, manufactured by the Kunkel Valve Grinder Mfg. Co., Hart, Mich., Sales Dept. Jessop & Thompson, 1421 S. Michigan Ave., Chicago. This tool was especially designed to facilitate grinding in the rear valve on a Ford engine. It will also grind large valves.

The teeth in the gear are so arranged that the grinding shaft oscillates and never leaves the valve in the same position. It has a bronze handle with steel gears, machine-cut and three bits and a spring to lift the valve off the seat while grinding. The price is \$6.



New Electrical Test Units of the Service Products Line

Left: Model TF-5 Ford Test Unit for the Ford motor and generator and parts. Right: Model TF-4

Test Unit for Fords with pulley for driving it. Above Center: No. 103 Mica Undercutter, Motor-Driven. Below Center: Universal Piston Vise

#### The Springfield Bench and Straightening Presses

A machine designed for straightening crank and camshafts and sundry other straightening work is that accomplished by the presses put out by the Springfield Machine Tool Co., Springfield, Mass.

In these presses the blocks upon which the work is mounted are movable to or from the screw and are retained in proper alignment which fits the groove, as shown in the accompanying illustration. The shaft is movable through the arm which



Springfield Straightening Press No. 0 This is a bench straightening press with centers and has a capacity for stock up to  $2\frac{1}{2}$  in.

supports it, being held in position by a set screw, the point of which is provided with a piece of brass to prevent marring the shaft. The right center is pressed forward by a spring which can also be drawn back by pulling on its knurled head. Both centers are provided with small oil wells. The body of the machine is bolted to the bench by three plugs. The cast steel block, of No. 00 press, which is a smaller design, is for bending or straightening material up to 134 in. in diam. The distance between the sliding blocks and the maximum distance between centers is 32 in. The net weight of this press is 130 lb.

No. 0 model is a slightly larger press which will bend or straighten stock up to 2½ in. in diam. The maximum distance between the sliding blocks of this press is 19 in. and the maximum distance between the centers is 41 in. The net

weight is 325 lb.

#### Perkins Presses

The illustrations shown herewith are presses of the Perkins machine line. These products are offered by the Perkins Machine Co., Warren, Mass. A number of



Perkins Crimson **Beauty Press** This s m all power punching press has a 1-in. stroke



Perkins Model KB No. 1 Press This model is built in four sizes

presses of various types are included in this concern's lines, most of which are made in various sizes. The Model KB No. 1 Press weighs approximately 600 1b. and has a screw the diameter of which is 11/2 in. The distance between standards is 12 in. and the distance from the bed to the plunger when raised is 10 in. The length of the stroke is 6 in. and the height of the table 24 in.

The Crimson Beauty, another model, is a small power press weighing 250 lb., having a 1-in. stroke and a piston hole of 3/4 in. A 3-in. opening is provided in the bed and is round in shape. This small press covers a floor space of 12 x



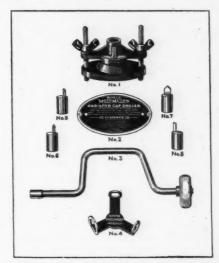
Perkins Model LA No. 6 Press This stamping press occupies a floor space 20 x  $23\frac{1}{2}$  in. and weighs 300 lbs.

15 in. The balance wheel of the press is designed to operate at 175 r.p.m. and is 14 in. in diam. and 21/4 in. wide.

The weight of the model L. A. No. 6 press is approximately 300 lb. and has a table measuring 14 x 23 in. The stroke of its piston is 2 in. The area of the bed is 6 x 12 in. The distance from the floor to the bed is 33 in. and the floor space covered by the bed is 20 x 231/2 in.

#### Boyce Moto-Meter Radiator Cap Driller

Announcement is made by The Moto-Meter Co., Inc., Long Island City, N. Y., of the Boyce Moto-Meter Radiator Cap Driller. They claim this device simplifies the installation of Boyce Moto-Meters, making it easier for the dealer, and quicker for the waiting customer. It holds the radiator cap securely against rotation, and enables one to center the hole perfectly. It is stated that no risk of chipping and splitting the surface of the radi-



Units of the New Radiator Cap Driller

ator cap is involved. A drill is provided for every model Moto-Meter.

The complete outfit includes the following eight units: Cap driller fixture; wall plate, with full instructions; special brace; Boyce Moto-Meter wrench; 7/16 in. drill, for "Junior" and "Midget" models; 5% in. drill, for "Standard" and "Universal" models; Overland reamer; 34 in. drill, for "De Luxe" and "Truck and Tractor" models.

The total weight of this outfit, packed in carton, is 5½ lb. The price to dealers is \$6.50 net.

#### Victory Piston Ring Compressor

A device that will facilitate the inserting of piston rings is being marketed by the Victory Ring Compressor Co., Inc., 1462 S. Wabash Ave., Chicago, Ill. This tool compresses piston rings when inserting piston in cylinder blocks.

This device can be instantaneously adjusted to fit all sizes of piston rings from 234 to 9 in. in diam. and can be used on all types of engines for inserting the pistons either in the top or bottom of the cylinder. The handles of this device are stamped from high quality steel and the one piece adjustable band is made from one piece of special grade steel.



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## Special Equipment Mounted on Truck for Making and Selling Liberty Root Beer

VERY wide-awake, alert and in-genious dealer has business. He takes advantage of every phase and detail that bears the slightest relation to his particular line of business. That, which to the average man, if the idea did not escape him entirely, appears trivial and impractical, requiring time, effort and money for what to him is an experiment and apt to prove a failure, receives the thorough attention of a true business man. Ideas are analyzed as to their practicability, applica-tion and general popularity. The wide awake dealer is not afraid to launch from the conventional-and-established in an endeavor to create new business. Reports and news items that reach us almost every day, concerning a novel enterprise by this dealer, an advertising stunt by another and a specially designed job by still another, indicate that business opportunities for the really worth-while-dealers are innumerable, if he will but look about and seize and investigate every little sign of business that comes his way. The following shows how one opportunity was grasped and transformed into a profitable enterprise for all concerned.

Liberty root beer, which was put on the market about a year ago, was originally sold from stationary fountains only. Transporting the big barrels and other paraphernalia around being quite a job, an outfit was designed to be carried on a motor truck by a dealer.

The first outfit was mounted on a 3½-ton Selden truck. The Richardson company, the enterprising dealer and holder of all patents in connection with this outfit, has placed it with the Walker Amusement and Concession Co.

This truck will carry the outfit around with the circuses and is complete in every smallest detail. Syrup and water are carried in large tanks, two self-mixers, oper-

ated by electric motor, properly mix the ingredients. After the mixing the finished beverage runs into two large barrels. These barrels are really coolers and have such a capacity for cooling that the liquid would be cold even though the five spigots were open continually.

The arrangements for drawing the beer, plumbing fixtures and washing pockets are exactly the same as at the best fountains. The outfit will make up 500 gal. of root beer with one filling. Electric lights and power are provided by auxiliary

power plant, operated by gasoline. Even with the machine in full operation, very little vibration is felt.

Two ticket windows are provided at the front—one on each side, as the outfit can be worked from both sides. The driver's seat folds up and provides comfortable padded seats for the cashiers who operate the very latest electric cash register and ticket seller. The counter reaching around the truck can be folded up and packed in long boxes carried under the truck.

The compartment over the driver's seat has a porthole and is equipped with a mattress and bed clothing—it makes a very comfortable sleeping quarter for three. The seat itself will provide a third "bedroom." The Richardson company estimate that this job will pay for itself in a very short time indeed in profits accruing from the sale of the root beer.

#### Washington Dealer Association Prevents Large Automobile Assessment

ST. LOUIS. - How a state dealer association's legislative activity prevented the assessment of \$5,835,500 in penalties and taxes for the automobile trade in one state in one year is graphically told in a letter to Harry G. Moock by the Washington Automobile Chamber of Commerce. The acting secretary, J. H. Snoddy, of Seattle, has just forwarded to Harry D. Austin, Seattle director of the National Automobile Dealers' Association, a resume of the season's work. The Washington association is affiliated with the N. A. D. A. and mapped out its legislative program in conformity to the program of uniform laws advocated by the N. A. D. A.

Bills which can be calculated specifically in money were for confiscation of cars under prohibition legislation, installing speed regulators on motor vehicles, taxes for free camp sites, drivers' license, postponement of date of taking effect of the gasoline tax law, reduction in gasoline tax from 2 cents proposed to 1 cent, bill adjusting license fees for renewals in mid-year.

These items Secretary Snoddy analyzes as follows:

Defeat of confiscation bill	\$75,000	
Defeat of speed regulation bill		
(first cost)	3,800,000	
Defeat of park tax (per year)	300,000	
Defeat of auto registration bill		
(first cost)	569 500	

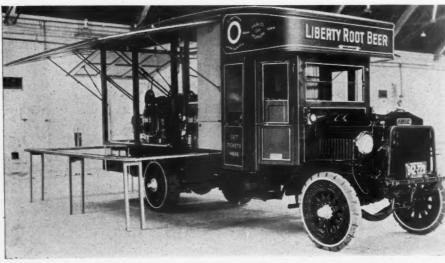
Reduction in gas tax (2 cents to 1 cent) per year ........... 1,000,000 Postponing effective date gas

#### Lee Trailer Issues Attractive Advertising Literature

Attractive two-color literature is being distributed by the Lee Trailer & Body Co., 2343 S. LaSalle St., Chicago, Ill, manufacturer of motor truck trailers, truck and trailer bodies and automatic side and end dumping bodies.

This literature calls attention to the fact that 40,000,000 sq. yd. of concrete pavement will be laid in 1921, and that this work could be accomplished by the use of 8000 light trucks equipped with Lee Automatic End Dump bodies.

According to the manufacturer this particular type of dump body is meeting with great success. Forty-six truck manufacturers are building a special short wheelbase chassis with pneumatic tires and with frame and spring length to accommodate the satisfactory mounting of the Lee body.



Root Beer Manufacturing and Selling Unit Mounted on a Selden Truck

# Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line

Fan Belt Type: V-V-Shape, F-Flat, R-Round

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# ABBREVIATIONS OF

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55 Note: Numerals on This Page Correspond With Numerals at Head of Specification Columns on Page Following. In All Specifications—O, Own; Op or Opt, Optional Steering Gear: CAS—C. A. S. Products Co. W-C-Warner Corporation W-L-Waterhouse & Lester Wes-Western Wheel Co C&M-Crane & McMahon Lav-Lavine M-P Muncie Products Day—Dayton Det—Detroit E&O—Eberly & Oris Hay—Haynes Flot—Floating
1/2-Fl—Semi-Floating
1/4-Fl—1/4-Floating
D—Dead Hoo-Hoopes Brothers W-M-Weston-Mott US-United States Jon-Jones Kel-Kelsey Mot-Motor Wheel Mut-Mutual Nor-Northern Pru-Prudden Arc—Archibald AuW—Auto Wheel Sav—Savage Shel—Sheldon Thom—Thomson Tim—Timken Torb-Torbensen Rear Axle (Type): Walk-Walker Wis-Wsconsin Bak—Baker Det—Detroit Fir—Firestone Gdy—Goodyear Roy—Royer
Rus—Russell
Sal—Salisbury
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stm—Standard
Wal—Walker Sals-Salisbury Gem-Gemmer Woh-Wohlrab Jax—Jaxon Kel—Kelsey Stn—Stanweld Russ-Russel Dit-Ditwiler Rim Equipment: Wan-Wayne Bim-Bimel ac-Jacox Cla-Clark Wheels: Hart—Hartford
KB—Kinsler-Bennett
Mech—Mechanics
M-E—Merchant & Evans
Nor—Norwalk UM-Universal Machine UP-Universal Products N—Concentric Spur P—Spur R—Double Reduction S—Spiral Bevel W—Worm CI—Clark
Dun—Dunkirk
Eat—Eaton, Stan-Par
Hind—Hindley Per—Perfection Row—Rowland Shel—Sheldon STP—Spring Perch Stan—Stan-Par Ster—Sterling US-United States Wis-Wisconsin Bea—Beans Cham—Champion Det—Detroit GC—Garden City Rear Axle (Make): Amr—American Ther-Thermoid Kal-Kalamazoo -Internal Gear Ir.M—Iron Mt. Keno—Kenosha Ken—Kennedy Mar-Maremont Sned—Snead Spic—Spicer Ster—Sterling Hig-Higgins IC-Iron City Final Drive: B—Bevel Gear Rock—Rockford -Cooper Math-Mather Col-Columbia Stan-Chicago Nat-National Flex-Flexite Tem-Temme Badg-Badger Har-Harvey Lig-Liggett Del-Delany Mer-Merrill ax--Jaxon Pet-Peters Lah-Laher Pen-Penn Tut-Tuthill -Chain Munc-Muncie
M-P-Muncie Products
Rock-Rockford
W-C-Warner Corporation
W-Gr-Warner Gear G-Le—Grant Lees MM—Mechanics Mach. Co Kin-Kingston KW-K. W. Ignition Co. Amr-American Swiss AtK-Atwater-Kent AuL-Auto-Lite D-Sea—Driggs-Seabury Det—Detroit NE—North East
POL—Prest-O-Lite
Rm—Remy
Sim—Simms
Spl—Splitdorf
Wag—Wagner
Wes—Westinghouse A-B-Easton Mch. Co. -Unit with jackshaft Bj—Bijur DL—Delco Dy—Dyneto GD—Gray & Davis U-Unit with engine Bear-Bearings Co. Bld-Blood Brothers Dit-Ditwiler Engine Starter:
AC—Allis-Chalmers
AL—Auto-Lite LN-Leece-Neville NE-North East RE-Remy Wg—Wagner USL—U. S. L. W—Westinghouse Location of Gearset: WD—Wet Disc DD—Dry Disc Fr—Friction Con-Connecticut B-Li-Brown-Lipe Del-Delco Eis-Eisemann Durst-Durston Ignition System: Lor-Louraine Dun-Dundore A-Amidships Ber-Berling Covt-Covert Full-Fuller Bos-Bosch Acm-Acme Exi-Exide Cott-Cotta Arv-Arvac Gearset: Det.—Detlaff Full.—Fuller D. G.—Detroit Gear & Mach. Hart—Hartford HS—Hele-Shaw M-E—Merchant & Evans Munc.—Muncie M-P—Muncie Products T-D—Twin Disc W-C—Warner Corporation FS—Force and Splash F—Force Feed S—Splash ZZT—Zig Zag Tube FIN—Fin Tube Lubrication: W-Gr-Warner Gear B. B.—Borg & Beck B-Li.—Brown-Lipe B&B-Ball & Ball Strm—Stromberg Shk—Shakespeare Sheb—Schebler Pier—Pierce Rug—Ruggles Sim—Simplex Wau—Waukesha Clutch (Make): Holl—Holley John—Johnson King—Kingston Mar—Marvel Clutch (Type):
D—Disc
C—Cone
DP—Dry Plate
WP—Wet Plate Governor: Con-Continental Dup—Duplex Hin—Hinkley Mer—Merrill McC—McCanna Mon—Monarch Mas—Master Mill—Miller Rayf—Rayfield Eag—Eagle Ens—Ensign Flch—Fletcher Till—Tillotson Zen—Zenith Fuel Feed: Bent-Bennett Stew-Stewart Cart—Carter G—Gravity
P—Pressure
V—Vacuum Del-Delaney Phar-Pharo Scoe-Scoe Carburetor: GBS-Golden, Belknap & Gr-B-Gray-Beal [Swartz Lib-Liberty LMF-Light Mfg. & Fdy. S-W-Sparks-Withington Spart-Spartan Spec-Special Splica-Splitas Stan-Standard Hin—Hinkley HSp—Herschell-Spillman LeR—Le Roi Can—Candler Chic—Chicago EM—English-Mersick Eur—Eureka Fed—Fedders A—Air
B—Pump & Thermo
C—Centrifugal
G—Gear Pump
T—Thermo-Syphon R-T-Rome-Turney Ster-Sterling TC-Twin City Vict-Victory Wau-Waukesha Wei.-Weidely Valve Arrangement: H-Overhead Cont-Continental Lyco-Lycoming Mid-Midwest C—Cellular H—Honeycomb PT—Plain Tube Radiator (Make):
BW-B & W
Brm-Brenem Jam-Jamestown Kue-Kuenz L—ELL-Head T—TEE-Head S—Sieeve Liv-Livingston Her-Hercules Rut-Rutenber GO-G. & O. Har-Harrison Radiator (Type): Lng—Long McC—McCord Beav-Beaver Hoo-Hooven May-Mayo Mod-Modine Per-Perfex How Cooled: Bus-Bush

# Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. GasolineTractor-Trucks Will be Found at the End of Gasoline Commercial Cars

See Also Replacement Table in "Service and Repair Departments." Truck Frame Dimensions Are Included in Replacement Table

\* An asterisk in front of the model name indicates that corrections have been made somewhere in the specifications since the previous month (Where prices are not given it is because we have been unable to get them from authoritative sources)

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# ELECTRIC COMMERCIAL CARS

Name and Model Number	Carrying Capacity	Chassis Weight	Chassis Price	Maximum Speed	Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front	Rear	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
Ward WS 2  C-T BR 1  Walker M.  Atlantic 1C.  Ward WA.  C-T BR 2.  Lansden 1  Steinmetz.  Ward WB.  Atlantic 2C.  C-T BR 4  Lansden 2.  Ward WB.  Atlantic 3C.  C-T AK 7  Lansden 3½.  Ward WD.  Atlantic 5C.  Couple Gear H.  Couple Gear A.  C-T AK 10.  Lansden 5.  Walker N.  Walker N.  Walker N.  Walker N.  Walker N.  Ward WH.  Atlantic 6C.  Couple Gear A.  C-T AK 10.  Lansden 5.  Walker P.  Walker N.  Ward WH.  Atlantic 6C.  Couple Gear LD.	750 1000 1000 2000 1250 2000 4000 4000 4000 7000 7000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000 10000	1500 2000 2300 2770 2730 2400 2400 2400 3430 3590 4000 4400 4500 5220 5800 6600 6230 7500 6500 7500 6500 7500 6300 8370 8370 1000 8300 8370 8300 8370 8300 8300 8300 8	2800 2800 4200 4750 5250 4400	13 14 15 12 12 12 14 11 11 11 11 11 11 11 11 10 7 10 9 10 6 8 10	Opt	45 60 60 	G-E G-E West G-E	Own Own West G-E G-E Own West G-E G-E Own West G-E G-E Own G-E	445444 .45444 .5454 .555554 .555555	W C-T OC W C-T O W C C-T O W C C T O W C C B B B I O O W C B	Shel Flot Own Timk Shel Flot  Own Shel Timk Flot  Own Shel Timk Own	Shel Shel Math S-El Shel Shel Math Shel S-El Shel Math Shel Shel Shel Shel Tut Tut Shel Math Math Shel S-El Tut	32x3 36x3 34x3 34x3 36x3 36x3 32x4 34x3 36x4 36x4 36x4 36x5 36x5 36x5 36x5 36x5 36x5 36x5 36x5	32x3 36x3 36x3 36x3 36x4 36x3 36x4 36x4 36	Ross Own Ross W  Ross W  Ross Own Ross W  Ross Own Ross Ross Own Ross Ross Own Ross Own Ross Ross Own	88 8914 93 103 90 101 Opt 96 102 1115 112 114 135 122 132 144 96 96 96 96 132 131 141 141 141 141 156 96	60 60 65 60 60 60 65 60 65 60 65 55 70 65 55 75 55 66 66 67 67 65 55

# Manufacturers Whose Models Are Included in Specifications on Preceding Pages

Acason—1, 1½, 2, 3½, 5—Acason Motor Truck Co., Detroit, Mich. Ace—1½, 2½—American Motor Truck Co., Newark, Ohio. Acme—¼, 1, 1½, 2, 3½, 5—Acme Motor Truck Co., Cadillac, Mich. Actna—1½, 2½, 3½, 5—Actna Motors Corp. of N. Y., New York, N. Y.

Akron Multi-Truck—1—Thomart Motor Truck Co., Chicago, Ill. All-Power—3½—All-Power Truck Co., Detroit, Mich. American—2½, 4—American Motor Truck & Tractor Co., Portland, Conn.

American—2½, 4—American Motor Truck & Tractor Co., Portland, Conn.

Apex—1, 1½, 2½, 3½—Hamilton Motor Co., Grand Haven, Mich. Armleder—1, 2½, 3½—O. Armleder Co., Cincinnati, Ohio.

Atco—1½, 2½—American Truck & Trailer Corp., Kankakee, Ill. Atlantic—1, 2, 3, 5, 6—Atlantic Electric Vehicle Co., Newark, N. J. Atlas—1—Atlas Truck Corp., York, Pa.

Attebury—1½, 2½, 3½, 5—Atterbury Motor Car Co., Buffalo, N. Y. Autocar—2, 3½—Autocar Co., Ardmore, Pa.

Available—1½, 2½, 3½, 5, 7—Available Truck Co., Chicago, Ill.

Avery—1—Avery Company, Peoria, Ill.

Beck-Hawkeye—1, 1½, 2, 3—Beck-Hawkeye Motor Truck Works, Cedar Rapids, Iowa.

Bell—1, 1½, 2½—Lowa Motor Truck Co., Ottumwa, Ia.

Bell—1, 1½, 2½—Lowa Motor Truck Co., Chicagon, Pa.

Bessemer—1, 1½, 2, 3½—Belmont Motors Corp., Lewistown, Pa.

Bessemer—1, 1½, 2½, 4—Bessemer Motor Truck Co., Grove City, Pa.

Bethlehem-1, 2, 3, 4-Bethlehem Motor Truck Corp., Allentown,

Bridgeport—1½, 2½, 4, 6—Bridgeport Motor Truck Co., Bridgeport,

Conn.

Brinton—2½—Brinton Motor Truck Co., Phladelphia, Pa.

Briscoe—1—Briscoe Motor Corp., Jackson, Mich.

Brockway—34, 1½ 2½, 3½, 5—Brockway Motor Truck Co., Cortland, N. Y.

C. T.-1, 1½, 2, 3½, 5—Commercial Truck Co., Philadelphia, Pa. Capitol—1½, 2½, 3½—Capitol Motors Corp., Fall River, Mass. Case—2—J. I. Case Plow Works Co., Racine, Wis. Chevrolet—¾, 1—Chevrolet Motor Co. of Mich., Flint, Mich. Chicago—1½, 2½, 3½, 5—Chicago Motor Truck, Inc., Chicago, Ill. Climber—1½—Climber Motor Corp., Little Rock, Ark. Clydesdale—1, 1½, 2½, 3½, 5—Clydesdale Motor Truck Co. Clyde, Ohio.

Ohio.
Coller—1, 1½, 2, 2½—Collier Motor Truck Co., Bellevue, Ohio.
Collumbia—1½, 2½—Columbia Motor Truck & Trailer Co., Pontiac,

Mich.
Comet—1½—Comet Automobile Co., 156 S. Water St., Decatur, Ill.
Commerce—1¼, 1½—Commerce Motor Car Co., Detroit, Mich.
Concord—1½, 2½—Abbott-Downing Truck & Body Co., Concord, N. H.

Cook—2—Cook Motors Corp., Kankakee, Ill. Corbitt—1, 1½, 2, 2½ 3½, 5—Corbitt Motor Truck Co., Henderson, N. C.

N. C. Couple Gear—3½, 5½, 6—Couple Gear Electric Truck Co., Grand Rapids, Mich. Cyclone—1½—The Cyclone Starter & Truck Co., Greenville, S. C. Dart—1½, 2½, 3½—Dart Truck & Tractor Corp., Waterloo, Ia. Day-Elder—1, 1½, 2, 2½, 3½, 5—Day-Elder Motors Corp., Newark, N. J.

N. J.

Dearborn—1½, 2—Dearborn Truck Co., Chicago, Ill.

Deflance—1½, 2—Defiance Motor Truck Co., Detroit, Mich.

Denby—1, 1½, 2, 3, 4, 5—Denby Motor Truck Co., Detroit, Mich.

Dependable—1, 1½, 2, 3½, 3½—Dependable Truck & Tractor Co.,

Galesburg, Ill.

Diamond T—1¼, 1½, 2, 3½, 5—Diamond T Motor Car Co., Chicago,

Ill.

Diehl—1—Diehl Motor Truck Works, Philadelphia, Pa.
Doane—2½, 3½, 6—Doane Motor Truck Co., San Francisco, Cal.
Dodge—1½—Dodge Bros., Detroit, Mich.

Dorris—2, 3½—Dorris Motor Car Co. St. Louis, Mo. Double Drive—4—Double Drive Truck Co., Chicago, Ill. Douglas—1½, 2, 3—Douglas Motors Corp., Omaha, Neb. Duplex—2, 3½—Duplex Truck Co., Lansing, Mich. Duty—2—Duty Motor Co., Greenville, Ill. Eagle—2—Eagle Motor Truck Corp., St. Louis, Mo. Erle—1½, 2, 2½, 3½—Erie Motor Truck Mfg. Co., Erie, Pa. F. W. D.—3—Four-Wheel Drive Auto Co., Clintonville, Wis. Facto—2½—Facto Motor Trucks, Springfield, Mass. Fageol—1½, 2, 3½, 5, Fageol Motors Co., Oakland, Cal. Fargo—2—Fargo Motor Truck Co., Chicago, Ill. Federal—1, 1½, 2, 3½, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.

Fargo—2—Fargo Motor Truck Co., Cnicago, III.
Federal—1, 1½, 2, 3½, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.
Ford—1—Ford Motor Co., Highland Park, Mich.
Ford—1—Ford Motor Co., Highland Park, Mich.
Forschier—1, 1½, 2, 3—Forschler Motor Truck Mig. Co., New Orleans, La.
Front Drive—1½—Double Drive Truck Co., Chicago, III.
Fulton—1, 2, T.T.—Fulton Motors Corp., New York, N. Y.
G. M. C.—¾, 1, 2, 3½, 5—General Motors Truck Co., Pontiac, Mich.
G. W. W.—1½—Wilson Truck Mig. Co., Henderson, Ia.
Garford—1¼, 2, 3½, 5—Gary Motor Truck Co., Gary, Ind.
Gary—1½, 2½, 3½, 5—Gary Motor Truck Co., Gary, Ind.
Gersix—1½, 2½, 3—Gersix Mig. Co., Seattle, Wash.
Glant—1½, 2½, 3,—Gersix Mig. Co., Seattle, Wash.
Glant—1½, 2½, 3,—Gersix Mig. Co., Seattle, Wash.
Glant—1½, 2½, 3,—Graham Brothers, Evansville, Ind.
Gramm—Bernstein—1, 1½, 2, 2½, 3½, 5—Gramm-Bernstein Motor Truck Co., Lima, Ohio.
Hahn—1, 1½, 2, 2½, 3½, 5—Hahn Motor Truck & Wagon Co., Hamburg, Pa.
Hal-Fur—2, 3½—Hal-Fur Motor Truck Co., Cleveland, Ohio.
Hall—2½, 3½, 5, 7—Lewis-Hall Motors Corp., Detroit, Mich.
Harvey—1½, 2½, 3½, 5—Harvey Motor Truck Co., Harvey, III.
Hawkey—1½, 2½, 3½, 5—Hendrickson Motor Truck Co., Chicago, III.
Hewitt-Ludlow—1½, 2, 2½, 3½, 5, T.T.—Hewitt-Ludlow Auto Co.,

Hewitt-Ludlow—1½, 2, 2½, 3½, 5, T.T.—Hewitt-Ludlow Auto Co., Inc., San Francisco, Cal.
Highway-Knight—4, 5—Highway Motors Co., Chicago, Ill.
Higrade—1, 1½—Higrade Motors Co., Harbor Springs, Mich.
H & M—2—H & M Motor Truck Co., Inc., Baltimore, Md.
Hoover—1, 1½—Hoover Wagon Co., York, Pa.
H. R. L.—¾, 1½, 2½—H. R. L. Motor Co., Seattle, Wash.
Huffman—1½—Huffman Bros. Co., Elkhart, Ind.
Hurlburt—1½, 2½, 3½, 5—Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.

burg, Pa. Independent—1½, 2½, 3½—Independent Motor Co., Youngstown,

Independent-11/2, 21/2-Independent Motor Truck Co., Inc., Daven-

port, Ia. port, Ia. ladiana Truck Corp., Marion, Ind. ladiana—1½, 2, 2½, 3½, 5—Indiana Truck Corp., Marion, Ind. laternational—1, 1½, 2, 3, 5—International Harvester Co., Chicago,

III.
Italia—2, 3, 5—Italia Motor Truck Co., San Francisco, Cal.
Jackson—3½—Jackson Motors Corp., Jackson, Mich.
J & J—2—The Lorain Motor Truck Co., Lorain, Ohio.
Jumbo—1½, 2, 2½, 3, 3½, 4—Nelson Motor Truck Co., Saginaw,
Mich.

Mich.

Kalamazoo-1½, 2½, 3½-Kalamazoo Motor Corp., Kalamazoo, Mich.

Mich.

Kankakee-2½-Kankakee Automobile Co., Kankakee, Ill.

Karavan-2½-Caravan Motors Co., Portland, Ore.

Kearns-¾, 1½-Kearns-Dughie Motors Co., Danville, Pa.

Kelly-Springfield-1½, 2½, 3½, 5, 6-Hare's Motors, Inc., New York, N. Y.

N. Y.

Keystone—2—Keystone Motor Truck Corp., Philadelphia, Pa.

Kimbali—2, 2½, 3, 4, 5—Kimball Motor Truck Co., Los Angeles, Cal.

King Zeitler—2, 4—King Zeitler Co., Chicago, Ill.

Kissel—1, 1½, 2½, 4, 5—Kissel Motor Car Co., Hartford, Wis.

Kleiber—1, 1½, 2, 2½, 3½, 5—Kleiber & Co., Inc., San Francisco.

Cal.

Koehler-14, 21/2, T.T.-H. J. Koehler Motors Corp., Bloomfield,

N. J. 4, 272, 17.—H. J. Roemer Motors Corp., Biodinied, N. J. Kuhn—T.T.—Kuhn Tractor Truck Co., Seattle, Wash. Lange—2—Lange Motor Truck Co., Pittsburgh, Pa. Lansden—1, 2, 3½, 5—Lansden Company, Danbury, Conn. Larrabee-Deyo—1½, 2½, 3½, 5—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
L. M. C.—2½—Lousiana Motor Car Co., Shreveport, La. Lombard—T.T.—Lombard Auto Tractor Truck Corp., New York, N. Y.

—Lone Star Truck & Tractor Assn., San Antonio, Tex. —1, 1½, 2—Luedinghaus-Espenschied Wagon Co., St. Lone Star-1-

Lone Star—1—Lone Star Truck & Tractor Assn., San Antonio, Tex. Luedinghaus—1, 1½, 2—Luedinghaus—Espenschied Wagon Co., St. Louis, Mo.
Luverne—2, 3.—Luverne Automobile Co., Luverne, Minn.
Macca—1½, 2½, 3½, 6—Maccar Truck Co., Scranton, Pa.
MacDonald—7—MacDonald Truck & Tractor Co., San Francisco,

MacDonald—7—MacDonald Truck & Tractor Co., Cal.

Cal.

MacK—1½, 2, 3½, 5, 6½, 7½, T.T.—International Motor Co., New York, N. Y.

Marshall—¾, 2—Marshall Mfg. Co., Chicago, Ill.

Master—1½, 2½, 3½, 5, T.T.—Master Trucks, Inc., Chicago, Ill.

Maxwell—1½—Maxwell Motor Co., Inc., Detroit, Mich.

Menominee—1, 1½, 2, 3½, 5—Menominee Motor Truck Co., Menominee, Mich.

Moline—1½—Moline Plow Co., Moline, Ill.

Moreland—1, 1½, 2½, 4, 5—Moreland Motor Truck Co., Los Angeles, Cal.

Moreland—1, 1½, 2½, 4, 5—Moreland Motor Truck Co., Los Angeles, Cal.

Mutual—2, 2½—Mutual Truck Co., Sullivan, Ind.

Napoleon—¾, 1, 1½—Napoleon Motors Co., Traverse City, Mich.

Nash—1, 2—Nash Motors Co., Kenosha, Wis.

Nelson-LeMoon—1, 1½, 2½, 3½, 5—Nelson & LeMoon, Chicago, Ill.

Netco—2, 2½—New England Truck Co., Fitchburg, Mass.

Niles—2—Niles Motor Truck Co., Pittsburgh, Pa.

Noble—1½, 2, 2½, 3½—Noble Motor Truck Co., Kendallville, Ind.

Northway—2, 3½—Northway Motors Co., Natick, Mass.

Northwestern—2—Starr Carriage Co., Seattle, Wash.

Norwalk—1, 1½—Norwalk Motor Car Co., Martinburg, W. Va.

O. K.—1½, 2½, 3½—Oklahoma Auto Míg. Co., North Muskogee, Okla.

Northwestern—2—Starr Carriage Co., Seattle, Wash.
Norwalk—1, 1½—Norwalk Motor Car Co., Martinburg, W. Va.
O. K.—1½, 2½, 3½—Oklahoma Auto Mfg. Co., North Muskogee,
Okla.
Ogden—1½, 2½—Ogden Motor Truck Co., Chicago, Ill.
Old Hickory—1—Kentucky Wagon Mfg. Co., Louisville, Ky.
Old Reliable—1½, 2½, 3½, 5, 6—Old Reliable Motor Truck Co.,
Chicago, Ill.
Oldsmobile—1—Olds Motor Works, Lansing, Mich.
Olympic—2½—Olympic Motor Truck Co., Tacoma, Wash.
Oneida—1½, 1½, 2½, 3½, 5—Oneida Motor Truck Co., Green Bay,
Wis.
Orleans—1½, 2½, 3½—New Orleans Motor Truck Mfg. Co. New

Oneida—1½, 1½, 2½, 3½, 5—Oneida Motor Truck Co., Green Bay, Wis.

Orleans—1½, 2½, 3½—New Orleans Motor Truck Mfg. Co., New Orleans, La.

Oshkosh—2—Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.
Packard—2, 3, 5—Packard Motor Car Co., Detroit, Mich.
Paige—1½, 2½, 3½—Paige-Detroit Motor Car Co., Detroit, Mich.
Parker—2, 3½, 5—Parker Motor Truck Co., Milwaukee, Wis.
Patriot—1, 2, 3—Patriot Motors Co., Lincoln, Neb.
Plerce-Arrow—2, 3½, 5—Plerce-Arrow Motor Car Co., Buffalo, N. Y.
Ploneer—1—Pioneer Truck Co., Chicago, Ill.
Pittsburger—2½—Pittsburgh Truck Mfg. Co., Pittsburgh, Pa.
Power—3½, Power Truck & Tractor Co., Detroit, Mich.
Premocar—1½—Preston Motors Corp., Birmingham, Ala.
Rainier—¾, 1, 1½, 2, 2½, 3½, 5—Rainier Motor Corp., Flushing,
L. I., N. Y.
Reliance—1½, 2—Reliance Motor Truck Co., Appleton, Wis.
Reo—1¼—Reo Motor Car Co., Lansing, Mich.
Revolts—1½, 2½, 3½—Republic Motor Truck Co., Inc., Alma,
Mich.

Reynolds—1½, 2½, 3½, 5—Reynolds Motor Truck Co., Mt. Clemens, Mich.

Riker—3, 4—Locomobile Co. of America, Bridgeport, Conn.

Rowe—1½, 2, 3, 4, 5—Rowe Motor Mfg. Co., Lancaster, Pa.

Royal—1, 1½, 2, 2½, 5, 6, 7—Royal Motor Truck of N. Y., New York, N. Y.
Rumely—1½—Advance-Rumely Thresher Co., Inc., La Porte, Ind.
Sandow—1, 1½, 2, 2½, 3½, 5—Sandow Motor Truck Co., Chicago,

Sanford—2½, 3½, 5—Sanford Motor Truck Co., Syracuse, N. Y. Schacht—2, 2½, 3½, 5—G. A. Schacht Motor Truck Co., Cincinnati,

Schacht—2, 2½, 3½, 5—G. A. Schacht Motor Truck Co., Cincinnati, Ohio.

Schwartz—1, 1½, 2½, 4—Schwartz Motor Truck Co., Reading, Pa Selden—1½, 2½, 3½, 5—Selden Truck Corp., Rochester, N. Y. Seneca—½—Seneca Motor Car Co., Fostoria, Ohio.

Service—¾, 1, 1½, 2½, 3½, 5—Service Motor Truck Co., Wabash, Truck

Ind.
Shaw—¾, 1—Walden W. Shaw Livery Co., Chicago, Ill.
Signal—1, 1½, 2½, 3½, 5—Signal Motor Truck Co., Detroit, Mich.
Southern—1, 1½, 2—Southern Truck & Car Corp., Greenboro, N. C.
Standard—1, 2½, 3½, 5—Standard Motor Truck Co., Detroit, Mich.
Steinmetz—¾—Steinmetz Electric Motor Car Corp., Baltimore, Md.
Sterling—1½, 2, 2½, 3½, 5, 7½—Sterling Motor Truck Co., Milwankee, Wis.

Ill.

Superior—1, 2—Superior Motor Truck Co., Atlanta, Ga.

Texan—34, 1½—Texas Motor Car Asso., Fort Worth, Tex.

Tiffin—1½, 2½, 3½, 5, 6—Tiffin Wagon Co., Tiffin, Ohio.

Titan—2½, 3½, 5—Titan Truck Co., Milwaukee, Wis.

Tower—1½, 2½, 3½—Tower Motor Truck Co., Greenville, Mich.

Trabold—2½—The Trabold Company, Johnstown, Pa.

Traffic—2—Traffic Motor Truck Corp., St. Louis, Mo.

Transport—1, 1½, 2½, 3½—Transport Truck Co., Mt. Pleasant, Mich.

Traylor—1½, 2, 3, 4, 5—Traylor Eng. & Mfg. Co., Cornwells, Pa.

Triangle—34, 1½, 2, 2½—Triangle Motor Truck Co., St. Johns, Mich.

Triumph—1½, 2—Triumph Truck & Tractor Co., Kansas City, Mo.

Twin City—F. W. D., 3½—Twin City Four-Wheel Drive Co., Inc., St. Paul, Minn.

Twin City—2, 3½—Minneapolis Steel & Mach. Co., Minneapolis, Minn.

Twin City—2, 3½—Minneapolis Steel & Mach. Co., Minneapolis Minn.

Ultimate—1½, 2, 2½, 3—Vreeland Motor Co., Inc., Newark, N. J. Union—2½, 4—Union Motor Truck Co., Bay City, Mich. United—1½, 2½, 3½, 5—United Motors Co., Grand Rapids, Mich. U. S.—1½, 3, 4, 5—United States Motor Truck Co., Cincinnati, Ohio. Velie—1½—Velie Motors Corp., Moline, Ill.

Vim—½, 1, 2, 3—Vim Motor Truck Co., Philadelphia, Pa. Walker—½, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill. Walker—½, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill. Walker—5—Walter Motor Truck Co., New York, N. Y. Ward—1¼, 1, 2, 3½, 5—Ward Motor Vehicle Co., Mt. Vernon, N. Y. Ward—1¼, 1, 2, 3½, 5—Ward Motor Vehicle Co., Mt. Vernon, N. Y. Ward—1¼, 1, 2, 3½, 5—Ward Motor Vehicle Co., Inc., Elmira, N. Y. Watson—3¼, 3½, T.T.—Watson Wagon Co., Canastota, N. Y. Wells—2—Evans Truck & Axle Co., Auburn, Ind. White—3¼, 2, 3½, 5—White Co., Cleveland, Ohio. White—1, 1½, 2½—White Hickory Motor Corp., Atlanta, Ga.

Wichita—1, 1½, 2, 2½, 3, 3½, 5½—Wichita Falls Motors Co. Wichita Falls, Tex.

Wicox—1, 1½, 2½, 3½, 5—H. E. Wilcox Motor Co., Minneapolis,

Wilcox—1, 1½, 2½, 3½, 5—H. E. Wilcox Motor Co., Minneapous, Minn.
Wilson—1½, 2½, 3½, 5—J. C. Wilson Co., Detroit, Mich.
Winther—1, 1½, 2, 2½, 3½, 5, 6—Winther Motor Truck Co., Kenosha, Wis.
Witt-Will—1½, 2—Witt-Will Co., Inc., Washington, D. C.
Wolverine—1½, 3½—American Commercial Car Co., Detroit, Mich. Yale—1½—Yale Motor Truck Co., New Haven Conn.

# Activities of the Motor Truck Association of Philadelphia

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328 N. Broad Street

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#### THE COMMERCIAL CAR JOURNAL OFFICIAL ORGAN

USINESS conditions are getting much better rapidly." That was the message brought to the Motor Truck Association of Philadelphia at its monthly meeting at the Hotel Adelphia, Wednesday evening by Samuel M. Vauclain, president of the Baldwin Locomotive Works. Mr. Vauclain did not go into any details, as he said there wasn't much else to say. However, he remarked that business couldn't be much worse than it had been. He said that the anancial structure in this country had no doubt been seriously strained to give Europe as much credit as was possible. That, no doubt, affected business conditions here.

"However," continued Mr. Vauclain,

'you motor truck salesmen should go out with a slogan that business is good. Optimism is the watchword today. will sell more trucks by believing that you can sell them than by thinking you cannot. The salesmen of a business are the main dependents of that business. If you can't sell a product you may as well go out of business. The salesman is the reliable, dependable missionary of business. You can't have manufacturing or carry the expense of supporting workingmen without the salesmen to procure trade. Salesmen should be the best They should have a thor-Americans. ough knowledge of their product and high loyalty to manufacturer employing them.

A patriotic address on "Unrest in the

Business World Today" was made by A G. Morse, of New York City, who advocated regulation of immigration and amendment of federal laws to restrict anarchists, socialists and I. W. W.'s.

The meeting was presided over by Walter Y. Anthony, president of the association. W. H. Metcalf, secretary, reported on the legislative committee's ac tivities in connection with allied associations in this state in the modification of proposed bills before the state Legis lature that would seriously affect the motor truck industry. Arthur Bittong and nounced that the annual outing would be held at Lu Lu Country Club, the third Wednesday in June. The musical program was conducted by H. B. Armstrong

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# Taken From Current House Organs

# Business Morgues

Visualize a girl at the switchboard with a wad of hair over each ear, a wad of gum in her mouth, a magazine in her hand and a supercilious look on her face.

You hand her your card and ask to see Mr. So and So. "He's busy." "When do you think he will be at liberty?" "Don't know."

You are not asked to take a seat, as a matter of fact there are no seats to take. You shift from one foot to another, and all this time the switchboard queen is trying to make up her mind whether she will cast her vote for Charlie Chaplin or Douglas Fairbanks.

An exaggerated picture you say? Don't you believe it, because yesterday with our own eyes and ears we saw it and heard it.

The sands are shifting and the business morgues will have to go out of business. This applies to retail establishments as well as to manufacturing plants.

Light and sunshine, a hearty grasp of the hand and a pleasant smile attract while their opposites repel.

We just came out of a retail store. The salesman who waited on us didn't know us from a side of sole leather, but he was so pleasant and agreeable, without being effusive, that he sold himself to us, also the article we asked for without half trying.

"The mills of the gods grind slowly but they grind exceedingly small." That something called business is being put through the mill. The cold blooded business man of the last decade has no place and will find no room in the business of the future. — Four Runner, Kalamazoo Motors Corp., Kalamazoo, Mich.

# In This Case There Never Was and Never Will be Any Exceptions

Strange as it may seem it's a fact, nevertheless, that when a non-producing motor truck salesman is handed the "blue ticket" he immediately jumps to the conclusion that he is fired because of personal hatred, and, then, to cap the climax, the "big boss" receives a long letter of complaint about the sales manager not giving him a "square deal" and that he (the salesman) was the victim of personal animosity and long persecution. This so-called hatred on the part of the superior officer is all "bunk" and exists mostly in an overworked imagination.

That old adage about being "slow to hire and quick to fire" comes pretty near being gospel, and when the parting of the ways has been reached the sooner the deadwood is cast adrift the better, and you can't get rid of him too quickly. Pay him an extra month if necessary, but don't let him stay another day. A discharged employe on the force is like a

splinter in the thumb—a center of soreness. There are no exceptions to the rule because there are no exceptions to human nature. — Selden Spirit, Selden Corp., Rochester, N. Y.

# Ad is Salesman's Best Card of Entry

Norman Lewis, of the St. Louis Advertising Club, in a recent address given at a joint luncheon meeting of the sales managers and advertising men of the industries of the city of St. Louis, asserted that advertising is the missionary of merchandising and is the salesman's best card of entry.

The speaker declared that there were four different types of salesmen, the one who does not believe in advertising, the one who believes in it in a haphazard way, the one who thinks it is a mystic and wonder working force, and the salesman who realizes that advertising is his best friend. Lewis further declared that the building of good will is the greatest work in advertising. — Mason Mail, Mason Tire & Rubber Co., Kent, O.

# Cheer Up, Brother, Don't Get Blue

Don't be discouraged, don't give up, What though all things are looking blue, Think of the billions gone before, Who had to brave worse things than you.

What though our wages do go down, And rents are boosted to the sky, Meet them with a smile, don't frown, Good times are coming bye and bye.

We've faced too much to give up now, When victory is almost won, Let us be like the boys in France, No setback ever made them run.

If you think your lot is hard, Look on the other fellow's side, And then you'll humbly thank the Lord That your ship still can ride the tide.

I'd give you good advice on thrift, Such as would make a mighty tome, But that I think conditions now, Will serve to drive the lesson home.

So cheer up, brother, don't be blue, The sun is bound to shine again, There's better days for me and you. And we'll enjoy them yet, amen.

M. J. McDonough, Chase Diamond, Chase Companies, Waterbury, Conn.

The street railway company of San Salvador has recently purchased in the United States 20 passenger auto buses, which it is testing on it tracks with a view to replacing the present mule car service.

# Now They Scrape and Bow at Bill

Bill Goofus hadn't any sense, so everybody said. His brain, they thought, was very dense; some people thought it dead. But when Bill's eyes were blinking, we believe that Bill was thinking, though folks thought his brain was clinking in his "solid metal head."

Billie Goofus had no money in the village savings bank; that was why they thought him funny; why they thought his brain must clank, but the truth is he was trying to make up his mind to buying him a truck, there's no denying, so he went to brother Hank and he put the proposition as the thing appealed to him; told his brother his ambition; talked with purpose and with yim.

Brother Hank had gained, by slaving, quite a decent little saving, but he told Bill he was raving; that his profits would be slim. Then Bill went to see a stranger; showed an Acme Motor Truck; told him there would be no danger, and Bill Goofus was in luck, for the stranger in a minute saw that there was profit in it and that each would stand to win it, if our hero had the pluck.

Soon Bill had the Acme working and was busy every day; he gave up his job at clerking at a very meager pay and, as Bill was strong and willing, he soon found they'd made a killing and his pockets now were filling and success was his to stay.

Soon his friends were speculating at the thing that Bill had done, and there was no need debating; Bill was piling up the mon, and the folks who'd thought him silly were no longer distant chilly; they were proud to pal with Billie, whom they used to try to shun.

Just one man in town's disgusted and won't speak to Billie now; it's his brother Hank; he's busted, and the two have had a row. Now the gossip and the chatter is that Hank has no gray matter and that no one's head is fatter—while at Bill they scrape and bow.—Walter Wellman, Acme Angles, Acme Motor Truck Co., Cadillac, Mich.

# Membership Data Desired by Old Timers

Members of the newly formed Old Timers' Club are requested to get in touch with Ed. Spooner, secretary of the organization, at 420 Book Building, Detroit, for the purpose of furnishing proper information concerning their membership. In many cases improper addresses or no addresses at all are reported. Mr. Spooner will furnish application blanks on request.

The former membership buttons are obsolete and the designs for the new button, which will be permanent and attractive, are now being prepared.

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# Metal and Rubber Markets

# Steel Activities Expected to Revive Steadily Though Slowly

There is nothing in the present situation to warrant the expectation of a quick resumption of steel activities on more than a moderately improved scale, though mill representatives accepting the position speak more cheerfully. It is believed by these interests that if the railroads could be hauled out of the present rut the entire business of the country would improve and the volume of steel consumption greatly increased. But at the moment they are hopeless as a market.

#### Steel Products Prices

Per ton-Pittsburg	h—	
Bessemer billets	38 50 a 42 0	0
Open hearth		0
Forging billets .	43 50 a 51 0	10
Sheet bars	40 00 a 42 0	00

#### Sheet

Sheets
The following prices are for 100-bundle
lots and over f.o.b. mill:
Blue Annealed Sheets-
Pittsburgh (base) 3 00 a 3 55
Philadelphia 3 50 a 3 90
New York 3 58 a

#### Finished Iron and Steel

Tank plates, Pittsburgh 2 00 a	a 00	
Tank plates, New York 2 38 a	3 03	
Steel bars, New York 2 38 a	2 73	
Steel bars, Pittsburgh 2 00 a	2 65	

#### Iron and Steel at Pittsburgh

Bessemer iron28	96	a	
Bessemer steel, f.o.b. Pittsb'gh.38	50	a	
Skelp, grooved steel 2	35	a	2 45
Skelp, sheared steel 2	50	a	2 65
Ferromanganese (80%)90	00	a	
Steel, melting scrap15	00	a	16 00

#### Pig Iron and Alloys

No. 2 Pittsburgh27	00	a	28 00
No. 2 X Philadelphia27	26	a	27 54
No. 2 Valley, furnace 26	00	a	26 50
No. 2 East Pennsylvania24	50	a	25 50
No. 2 Southern Birmingham25	00	a	
No. 2 Virginia	00	a	28 00
No. 2 Chicago	50	a	28 50
Basic Valley, furnace25	00	a	
No. 2 Buffalo	00	a	30 00
Bessemer, Pittsburgh28	96	a	
Malleable, Chicago25	50	a	
Malleable, Valley26	00	a	27 00
Malleable, Buffalo27	50	a	29 50
Gray Forge, Pittsburgh25			

#### Ferro Allovs

Domestic Ferromanganese-			
Prompt delivery, 80%90	00	a	95 00
First quarter90	00	a	95 00
Spiegeleisen, 19 to 22%32	50	a	35 00
Ferrosilicon, 50%92	00	a	95 00
Bessemer, ferrosilicon, 12%59	60	a	

OTHER METAL PRODUCTS—Following are current prices for brass and bronze products:

Copper sheets, not rolled20	50	a	
Seamless tubing, bronze 24	50	a	
Seamless tubing, copper22	00	a	
Brazed tubing, brass29	50	a	
Brazed tubing, bronze34	25	a	
Brazed tubing, copper34	25	a	
Seamless high brass tubing21	00	a	
Seamless low brass tubing23	00	a	

ANTIMONY—There has been a fairly active demand but the holders are not particularly anxious to sell pending a possible readjustment of the tariff.

GRAPHITE—No improvement is reported in the demand for graphite. The market remains quiet and general consumption light.

MANGANESE—Manganese ore continues to move very slowly.

OLD METALS—There is practically no demand from consumers for aluminum and copper scrap upon which to establish a market.

Following are the dealers' buying and selling prices, f. o. b. New York:

Aluminum—	Buy	ring.	Se	lling.
Cast scrap	8 a	81/2	9	a 91/2
Clippings1 Copper—	1 a	12	13	a14
Heavy and wire	8 a	81/4	9	a 91/4
Light and bottoms	7 a	73/2	8	a 81/4
Brass, casting	5 a	51/2	6	a 61/4
Brass, light	3 a	31/4	4	a 41/4
No. 1 clean brass turn'gs	4 a	41/4	41	6a 434
No. 1 comp. turnings	6 a	61/4	7	a 71/4
Zinc scrap	2 a	21/2	3	a 31/4

#### Plantation Rubber Easy

Para—Up-river, fine	18	a	
Up-river, coarse	11%	a	12
Island, fine		a	18
Island, coarse	111/2	a	12
Caucho, ball, upper	14	a	144
Caucho ball, lower	11	a	111
Cameta	11	8.	
Plantation—			
Smoked ribbed sheets	171/4	a	
Centrals—Corinto	12	a	
Esmeralda	12	a,	
Guayule, wet	15	a	18
Guayule, dry	25	a	
Balata, block, Trinidad	53	a	
Balata, block, Colombian	38	a	39
Balata, Panama	36	a	37
Balata, sheet	65	a	68

SCRAP RUBBER—Nothing new is presented, demand being almost entirely wanting and prices nominally unchanged. Tires, automobile ... 1 a ... Inner tubes, No. 1 ... a 8 Inner tubes, No. 2 ... a 5

# Auto Car Issues Comprehensive Booklet on Highway Construction

The new booklet on Highway construction, recently issued by the Autocar Co., Ardmore, Pa., contains a complete and detailed outline of information as to modern methods of highway construction hauling. In it are also gathered intimate experiences of various contractors, showing how they encountered and overcame different obstacles, established better and more economical operating methods and reduced time, labor and costs, which they had learned through practical experience while working on their various contracts.

The illustrations, which are abundantly and artistically employed throughout, are of a nature that greatly enhance the educational value of the booklet. They are pictures depicting actual working routine and link up the story contained in the text so well as to convey to the reader a very clear idea of the important part played by the Autocar in the services demanded of it by the contractor. Copies of this booklet may be obtained free by those interested from the Autocar Co.

# Luverne Auto Company Offers a Complete Line of Fire Trucks and Equipment

The Luverne Motor Truck Co., Luverne, Minn., offer a line of complete motor fire trucks, all of which are furnished with or without pumps and are made in several sizes, to meet the requirements of large or small cities.

This company also offers a line of fire truck chassis in several sizes and a line of fire truck equipment for installing on any make of truck. It is claimed that with the Luverne line any auto or truck dealer can meet any competition, with good profit.



Showing Trailer Equipped With Trailer Attachment, and Truck Provided With a Radiator With Front Bumper and Tow Hooks, All of Which Are Products Sold by the Mansfield Steel Corporation, Detroit, Michigan

The trailer attachment is so constructed as to make it unnecessary to drill large holes in the truck frame.

It is manufactured to fit different width trucks, and is so constructed that there is no strain on the rear cross member at any time



Better Transportation
-The Nation's Vital Need

With rail facilities taxed to the breaking point, our biggest problem today is to relieve this strain and help transportation keep pace with industry and agriculture. Unquestionably the solution is the motor truck. Its worth has already been established, and the necessity for its use on a larger scale is becoming more and more apparent every day.

Ross Steering Gears have played an important part in making the motor truck a more efficient and reliable means of transportation. The easy steering, safety and reliability, which are guaranteed by the exclusive screw and nut design, have made Ross Steering Gears standard equipment on 454 different motor truck models from 178 different manufacturers.

Write for any further information desired

ROSS GEAR & TOOL COMPANY

760 Heath Street, Lafayette, Ind., U. S. A.

# ROSS STEERING GEARS

THE STEERING GEARS THAT PREDOMINATE ON MOTOR TRUCKS

APRI

# Truck Merchandizing Methods

(Continued from page 19)

read down, spell out "Luedinghaus Quality Motor Trucks" and the first word of every stanza, of which there are four, is one of the foregoing words in order. The result is pleasing and is impressed on the memory.

The pink folder is accompanied by a post card, self-addressed, which is intended for remailing to the company. This says: "Gentlemen-We would appreciate receiving further information regarding Luedinghaus Quality Motor Trucks. Spaces are left for further requests, the signature and address of the prospect. It is only when the post card comes back to the office that there is then mailed to the prospect, who evidently is of the promising sort, the expensive advertising follow-up literature from the factory. This is an economical step, preventing waste of costly material. The advertising matter then will reach only those who will be genuinely interested in it. The salesman will also follow up the prospect on receipt of the return post card, which is regarded as a signal that there is another "live" prospect in the field.

of next call, is prospect good? And on the reverse side these entries: Dates called, remarks and salesman's name.

As for service this includes free inspection every three weeks, testing out under power and the carrying of a stock of parts valued between \$15,000 and \$20,000. Delivery of parts within twenty-four hours of order is guaranteed.

There is an interesting sales proposal or contract in duplicate, the company retaining the white original form and a buff being filed in the office. Interviews with salesmen are chief sources of prospects for the customers' list, so these reports are comprehensive.

The entries on this form, which is 5½ x 3¼ in., are as follows: Name of prospect, with his business address and telephone number and his residence address and telephone number, date, name of salesman, source of inquiry, prospect's business, his position, model in which he is interested, model he owns at present and year of its manufacture, what he expects, offer of salesman's competitor, whether catalogue has been sent, what follow-up, when to interview prospect

Combination Retail and Wholesale Order Form Used by the Superior Motors Corporation, Philadelphia, Distributor of Apex and Ward La-France Trucks.

EXEC	CUTIVE OFFICES:	
1416-1418	SOUTH PENN SQUARE	
HONE. LOEUST 4339		
	Philadelphia, Pa.,	
		-
Please enter my order for one,	model	hasis,
elivered on or about	192	
In consideration of whichbe	ereby agree to payd	ollars
actory, and do hereby pay	dollars to apply as a deposit with my or	der, b
	dollars, to be paid as follows :	
RETAIL ORDER	MHOTEWATE ONDER	
dodel		*******
Color		
Color		
		******
Satras		
Satras		
Satras		*********
Satras.  Government Tax.  Freight  Fire. Theft and		*********
Satras.  Soverment Tax.  Freight.  Fire, Theft and Collision Insurance and Carrying Charge.		*********
Satras  Government Tax  Freight  Fire, Theft and  Collision Insurance and		*********
Satras.  Soverment Tax.  Freight.  Fire, Theft and Collision Insurance and Carrying Charge.	ae to any cause beyond our control.	
Satras.  Sovernment Tax.  Freight.  Fire, Theft and Collision Insurance and Carrying Charge.  Not responsible for delay in delivery du	ae to any cause beyond our control.	
Satras.  Sovernment Tax.  Freight.  Fire, Theft and Collision Insurance and Carrying Charge.  Not responsible for delay in delivery du Salesman.	se to any cause beyond our control.  Signature.  Address.	
Satras.  Government Tax.  Freight  Fire Theft and Collision Insurance and Carrying Charge  Not responsible for delay in delivery du Salesman  Accepted:  By	se to any cause beyond our control.  Signature.  Address.	

RETAIL ORDER

WOOD QUALITY MOTORS COMPANY hereby proposes to furnish you delivered at

CHASSIS No.

Model

Wheelbase Frame Back of Seat

TIRES

BODY

CAB
PAINT
LETTERING

EXTRAS

Chassis—In Finish Paint
Body
Cab
Streas
Extras
Streas

SALES PROPOSAL

Sales Proposal Used by the Wood Quality Motors Company, Philadelphia.

A simple white form,  $8\frac{1}{2} \times 5\frac{1}{4}$  in., is used as a daily report by the salesmen. The data therefrom is transferred by a stenographer to a complete prospect card,  $5 \times 3$  in., with spaces for following entries:

Name and address of company called on, party interviewed, present method of hauling, if trucks are used and how many, character of business, is prospect in market for additional equipment, what special requirements are necessary to facilitate their hauling conditions, dates copy going to the customer. The factory's standard warranty appears on the back of both.

# Salesmen's "Bible" Prevents Disputes

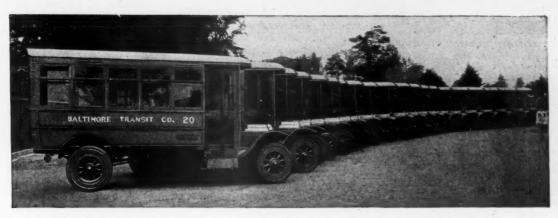
The Philadelphia Nash Motor Co. of which F. N. Delavan is sales manager, uses four forms in relation to prospective customers. The first of these is a white one in duplicate, one copy of which is kept by the salesman in his loose leaf pocket "passport," the other

again and salesman's opinion of interview. On the reverse side are spaces for general remarks or other data.

The foregoing data are transferred by a stenographer to the prospect card, a salmon pink form, 8 x 5 in. This form, which is filed alphabetically by prospect's name, is laid on the salesman's desk each morning. In addition to the entries appearing on the white form or slip carried in the salesman's loose leaf note book it has the following: Consumer campaign (this entry to be checked if the prospect's name is on that list), proposition made (good for six days only) and association used value. Under the subheading, "Record of Interview," are columns for the following: Date, interviewed personally or by telephone, had demonstration, secured order, bring up again, cancel prospect and "other remarks."

Under still another sub-heading, "Date for Next Interview," are given the year and every month in the year, each in a column, to be dated ahead for the sales-

# The Resiliency is Built in the Wheel



Fleet of Twenty Trucks, Sewell-Equipped, Owned and Operated by the Baltimore Transit Co.

# Sewell Cushion Wheels

IN EVERY FIELD OF TRUCK

Branches of the Sewell Cushion Wheel Co.

Akron, Ohio Atlanta, Ga. Baltimore, Md. Beaumont, Texas Boston, Mass. Buffalo, N. Y. Burlington, Iowa Camden, N. J. Casper, Wyo. Cedar Rapids, Iowa Chattanooga, Tenn. Cheyenne, Wyo. Chicago, Ill. Cincinnati, Ohio Cleveland, Ohio Columbia, S. C. Columbus, Ohio Dallas, Texas Davenport, Iowa Denver, Colo. Easton, Pa. Eldorado, Kans. Erie, Pa. Fall River, Mass. Ft. Smith, Ark. Ft. Wayne, Ind. Harrisburg, Pa. Houston, Texas Hutchinson, Kans. Jacksonville, Fla. Joplin, Mo. Kansas City, Mo. Knoxville, Tenn. Lancaster, Pa. Lawrence, Mass.

Lockport, N. Y.

TRANSPORTATION
SEWELL CUSHION WHEELS
HAVE PROVEN THEIR
EFFICIENCY
AND
ECONOMY
BY SUPPLYING PRACTICAL

PERMANENT RESILIENCY
TO MOTOR TRUCKS





Branches of the Sewell Cushion Wheel Co.

Los Angeles, Cal. Louisville, Ky. Memphis, Tenn. Miami, Fla. Middletown, Conn. Minneapolis, Minn. Milwaukee, Wis. Mobile, Ala. Montgomery, Ala. Nashville, Tenn. Newark, N. J. New Orleans, La. New York City Norwich, Conn. Omaha, Neb. Peoria, Ill. Philadelphia, Pa. Pittsburgh, Pa. Portland, Me. Portland, Ore. Providence, R. I. Pueblo, Colo. Rochester, N. Y. Salt Lake City, Utah San Antonio, Texas San Francisco, Cal. Seattle, Wash. St. Louis, Mo. Springfield, Mass. Springfield, Mo. Toledo, Ohio Washington, D. C. Wichita, Kans. Wilkes-Barre, Pa.

APRII

man as he may wish to interview the prospect.

A similar "Record of the Interview" appears on the reverse side of the form, assembled so the history of the interview

may be seen at a glance.

A companion card to this form, also salmon pink but smaller, being 6 x 4 in., for the use of the sales manager, also contains the name, business and residence address of the prospect, with both telephone numbers, the model in which he is interested, the model he owns at present and the date of filing. In addition the card is a "Record of Sale," under this sub-heading there being the following spaces for entries: Date of sale and of delivery, model, allotment, manufacturer's number, engine number, traded in, allowance, by whom financed, extra equipment and name of salesman. This card is filed in a cabinet drawer under the month of the year. The sales manager reviews the cards daily. Should he find that there are too many customers to be seen on a certain date, according to the cards, he will arrange the matter as best he may. If he notes that a salesman has been obliged to cancel a prospect he obtains a complete explanation of the incident. Prospects are not conclusively given up until they leave the sales territory or die or for some other equally cogent reason. In other words, there is no such thing here as a "dead" pros-

There is a form, known to the salesmen as the "Bible," which prevents disputes over who has the "right" to any prospective customer.

This is a book of brown sheets in loose leaf form, each 12 x 9½ in. The book is a register or roster of prospective customers, giving after the name and address of each, the last name of the salesman to whom each "belongs." Should a prospect become active again after having been regarded as only a remote possibility the date of refiling is placed before the prospect's name in the column "Date Refiled." This book shows a salesman whether a prospect, just obtained, already is the prospect of another salesman.

A prospect "belongs to" a salesman while that salesman is able to do constructive work on him every thirty days. Thereafter the work is spread out in rotation. All floor inquiries go to the salesmen on the floor for that day and a daily schedule of the floor men is kept by the sales manager under the glass top of his desk, where it is always visible. These men alternate on "stop in" prospects during the day. Each man has two days a week on the floor and the schedule is arranged in the most equitable manner possible regarding days "on."

The sales manager is the same for both trucks and passenger cars and a very gratifying response has been obtained from the practice of regarding every Nash passenger car owner as a good source of information for truck prospects. The same is true of the practice of considering every Nash truck owner as a prospect for another Nash truck. This is a valuable point, as sometimes factories making both passenger cars and trucks

or dealer concerns handling both types of vehicles, whether of the same manufacture or not, are apt to overlook this in the scramble after new names for the prospect list.

#### Colored Tabs Used as Follow-Up Signals

Directness and condensation characterize the methods and forms used by the Hurley Motor Co., Broad and Race Sts., which handles Reo speed wagons and passenger cars as distributor and dealer. The distribution territory comprises eight counties in eastern Pennsylvania and seven altogether in southern New Jersey and Delaware. There are some thirty dealer customers and a sales force of six men in addition to the sales manager, W. K. Armstrong.

The company specializes in "live" prospects, working on the theory, which it has proved to its own satisfaction, that nine times out of ten it is better policy to get a new prospect than to follow an "old" one down the long trail that leads to an uncertain ending. But the company gets many repeat orders by judicious handling of regular customers, one method being the employment of a man who is neither really a salesman nor a repairman yet who has the basic qualifications of both. He keeps in close touch with actual customers and the sales manager, frequently calls on the Reo speed wagon owner and keeps the office informed about possibilities for "repeats" here.

The Hurley Motor Company salesmen carry the usual type of daily report form, the data from which is copied by a stenographer on the prospect record, white card, 6 x 4 in.

On the face these cards contain at the top the figures 1 to 31, representing the

days of the month. Tabs of different colors are placed on that day of the month when the salesman is to interview that prospect again. The color may signify that the prospect is extremely "good" and should be followed up closely, or, for instance, that he is a "deferred purchaser." A glance at the tab on the date will remind the salesman what method to pursue with the prospect to be called upon.

The prospect records have spaces for the following entries on the face: Date. name of salesman, name of prospect and his home and business addresses and telephone numbers, his position, the source of the prospect, model of car and type preferred, special equipment and prices quoted, if a trade deal, car now owned by prospect, appraisal number and date, demonstration given, terms wanted, principal competition and date to follow up. On the reverse side will appear these entries: What features of company's car appealed to prospect, what features he objected to, date called and remarks.

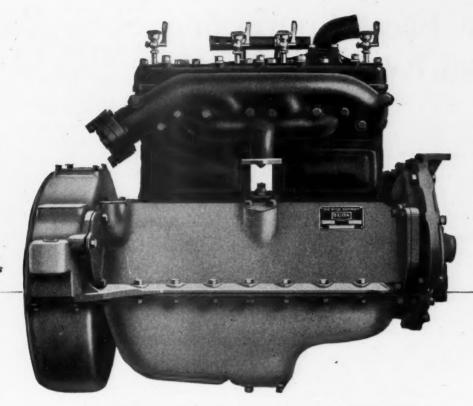
The appraisal entries refer to the fact that the company uses appraisal on second-hand cars. The "trade deal" entry is checked up "yes" or "no."

The order form or contract, which is not binding until accepted and signed by an officer of the company, is a condensed and handy form in duplicate, the original or white copy being retained by the office and the yellow copy being given to the customer. This form is divided into three classifications, the first containing the cost of the truck or car—the form may be used for either, the word "car" or "truck" being crossed out to conform—the second the terms of agreement and the third the conditions of agreement.

In the right hand column, under "Cost of Truck and Articles Ordered," are the items: Prices of truck, freight tax and delivery, price of extra equipment and total, with additional space where customer is financed, for added cost of terms including insurance against fire, theft and other insurance for 80 per cent coverage with space for grand total. In the opposite or left hand column are listed items for extra equipment with total. On the back of each copy is the manufacturer's warranty, while the outside of the order, when it is folded, gives the customer's name, model of truck, date of order, date of delivery, when car is delivered, its number, the order number and remarks.

	Philadelphia, Pa.,19
You are hereby authorized to enter (our orde	
Model Motor (TRUCK) with	Standard Factory Catalogue Equipment to be delivered on o
about theday of	19 which (1) agree to accept and settle fo
at the price and according to the terms set forth be	19 which (1/w) agree to accept and settle so who
COST OF (_SAR_)	AND ARTICLES ORDERED:
(TRUCK)	Extra Equipment:
/ 649 \	
Price of (CAR) \$	Clock
	Shock Absorbers
Freight Tax and Delivery \$	
	Extra Rim
Price of Extra Equipment 3	Extra Tire
the or man estudient	Extra Tube
	Tire Cover
Total \$	Tire Chains
	Monogram
Add Cost of Terms if Arranged, which includes Fire, Theft and	Painting
Call. Ins. for 80% Coverage \$	Special Body
	Remarks
	Total
Agree to settle for the above	S OF AGREEMENT.
Agree to settle for the abov	S OF AGREEMENT.  ve described (TRÜCk) freight and equipment the aggregate sum  (*
Agree to settle for the above	we described ( CAR   TRUCK) freight and equipment the aggregate sum   (8   Dollars as follows : *
Agree to settle for the above	ve described (TANCE) freight and equipment the aggregate sum  (8) Dollars as follows: "  to be in good
Agree to settle for the above  Cash deposit with this order  Allowance (# asy) on  condition mechanically, and with the followin	ve described (¬FAČE <sub>K</sub> ) freight and equipment the aggregate sum  (\$
Agree to settle for the above  Cash deposit with this order  Allowance (# asy) on  condition mechanically, and with the followin	ve described (¬FAČE <sub>K</sub> ) freight and equipment the aggregate sum  (\$
Agree to settle for the above  Cash deposit with this order  Allowance (# asy) on  condition mechanically, and with the followin  Cash payment on delivery (TELEC)	ve described ( CANCE) freight and equipment the aggregate sum  (\$) Dollars as follows: "  to be in good  g equipment \$
Agree to settle for the above  Cash deposit with this order  Allowance (# **w*) on.  Cash payment on delivery (TAUCK)  Balance (# **w*) in deferred payments subject to an	we described (\(\frac{\pi_0 \tilde{\pi_0}}{\pi_0}\) freight and equipment the aggregate sum  (\$\begin{array}{c} \) Dollars as follows: \$\begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
Agree to settle for the above  Cash deposit with this order  Allowance (# **w*) on.  Cash payment on delivery (TAUCK)  Balance (# **w*) in deferred payments subject to an	we described (-race of the second of the sec
Agree to settle for the above  Cash deposit with this order  Allowance (# awr) on  condition mechanically, and with the followin  Cash payment on delivery (TEUR)  Balance (# awr) in deferred payments subject to as  Tof this Order	re described (_FANC_x) freight and equipment the aggregate sum
Agree to settle for the above  Cash deposit with this order  Allowance (# ear) on condition mechanically, and with the followin  Cash payment on delivery (TADEN)  Balance (# ear) in deferred payments subject to ar  "of this Order  CONDITION  This (TADEN) to be accepted upon notification said car or truck, and no agreements, verbal or oil	we described (\( \frac{\text{ROE}_k}{\text{ROE}_k} \) freight and equipment the aggregate our \( \( \begin{array}{c} \) Dollars as follows: \( \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\
Agree to settle for the above  Cash deposit with this order  Allowance (4 ear) on.  condition mechanically, and with the followin  Cash payment on delivery (\(\tilde{\tiil	we described (TROK) freight and equipment the aggregate sum  (#
Agree to settle for the above  Cash deposit with this order  Allowance (# ew) on.  condition mechanically, and with the followin  Cash payment on delivery (TRUCK)  Balance (# ew) in deferred payments subject to at  of this Order  CONDITI  This (TRUCK)  This (TRUCK)  This order depayments subject to at  of this Order  CONDITIE  This (TRUCK)  This (TRUCK)  This (TRUCK)  This (TRUCK)  CONDITIE  This (TRUCK)  This (TRUCK)  This order depayments subject to at  conditions and the second subject to at  conditions are also as the	we described (-face ) freight and equipment the aggregate sum  (8
Agree to settle for the above  Cash deposit with this order  Allowance (# ****) on.  condition mechanically, and with the followin  Cash payment on delivery (****CAR**)  Balance (# ****) in deferred payments subject to ar  of this Order  This (****CAR**) to be accepted upon notificatis said car or truck, and no agreements, verbal or oil  Delivery of the above described articles is strikes, fire, labor trouble or other causes beyond  Accepted  HURLEY MOTOR COMPANY	to be in good  to be in good  to be in good  Agreement of Lease and made a part  on Agreement of Lease and made a part  on Uniform the terms of the warranty adopted by the manufacturer herwise, not embodied herein, will be recognized as binding. to be finade contingent upon delays caused in transportation, lyour control.
Agree to settle for the above  Cash deposit with this order.  Allowance (of easy) on  condition mechanically, and with the followin  Cash payment on delivery (\(\frac{CAB}{TRUCK}\))  Balance (of easy) in deferred payments subject to are of this Order.  CONDITION  This (\(\frac{CAB}{TRUCK}\)) to be accepted upon notification said car or truck, and no agreements, verball or of Delivery of the above described arricles is strikes, fire, labor trouble or other causes beyond Accepted	to be in good  The described (The described of the descri

Condensed, Threefold Form of Order Used by the Hurley Motor Company, Philadelphia. This Company Does Its Own Financing of Customers When They Want and Are Entitled to Credit.



New Buda
"Buddie" engine
for three-quarter
and one-ton trucks

THE new Buda "Buddie" engine, Model MU, has been developed especially to provide a better combination of speedy and economical driving power for three-quarter and one-ton trucks.

This latest Buda engine has a bore and stroke of 35% by 5½ inches, and an N. A. C. C. rating of 21.2 horsepower. It has a Buda force-feed oiling system and is furnished with either a centrifugal pump or a thermo-syphon cooling system.

Into the Buda "Buddie" are built the same toughness, ready accessibility, and capacity for reliable and economical power that distinguish the eight other Buda models, each of which fits a particular type of hauling.

We are glad to send detailed drawings and full specifications of the Buda "Buddie" to interested truck builders and engineers upon request.

THE BUDA COMPANY, HARVEY CHICAGO ILL.

ESTABLISHED 1881





# APRIL 15, 1921

APRI

# Some Facts Concerning Shop Equipment That Every Fleet Owner Should Know

By F. A. BEAN, Consulting Engineer Wayne Oil Tank and Pump Company

LTHOUGH the equipment of the repair shop and paint shop is usually given some thought it is very seldom given the serious consideration that it deserves. The size of both buildings will be governed by the number of cars in the fleet.

It will seldom be found advisable to establish completely equipped shops for a fleet of less than ten trucks maintained at a central station or within an economical driving radius of that station.

In this discussion we will consider the equipment for a fleet of ten trucks running in capacity from 11/2 tons to 31/2 tons. If the size of the fleet is increased to any great extent the size of the buildings and the amount and, in some cases, the size of the equipment, must be increased. There are a number of fleets in this country of between thirty and fifty units so located that a central shop could economically serve and maintain them all without having any work done at public garages or service stations except in a few isolated emergency cases.

## Outside Service is Mismanagement

When a company makes the plea that they maintain the garage only for storage and light repair work and that it is cheaper to have the yearly overhaul done at the manufacturer's service station than to maintain an efficient force of mechanics throughout the year, it is usually an excuse for mismanagement.

For a fleet of ten trucks the paint shop should be divided into two rooms. varnish and drying room should be large enough to hold one truck with at least seven feet of clear floor space on both sides and ends.

The general work room where painting, burning off, etc., is done should be large enough for two trucks with an additional floor space of 700 sq. ft.

If the air brush method of painting is used additional floor space should be provided for this equipment. If the stock of paints, varnishes and oils are kept in this department instead of the general stock room, still further floor space will be required. Wherever stored this material should not be kept in barrels or open cans, but from the standpoint of safety, economy and cleanliness should be kept in modern fireproof and dustproof containers.

One point should be kept well in mind, that is, that these trucks are used to carry a highly explosive commodity and that the tanks will be well filled with vapor steamed before being delivered to the shops. It should be positively known that tanks are entirely free of all vapor before attempting to burn off an old paint job by the torch method.

Therefore the shops should be fully fireproof and the forge, welding outfit, blow torches, etc., should be used in a separate room with fire walls, and the work of cleaning and washing parts in kerosene or gasoline should be done where there is no possibility of an open flame reaching the vapors. A better plan than to clean dirty parts with gasoline or kerosene is to install soda tanks for this work. All shops and garages should be well supplied with fire extinguishers of both the soda acid and the carbon tetrachloride types.

The repair shop should be large enough to accommodate all of the equipment with ample working room, work benches and room for at least three trucks. At least one air line should be run to both the repair and paint shops.

All buildings of this class should be well supplied with approved cans for oil rags and waste: All drains should be equipped with oil separators and traps.

The building should have as much daylight as possible and in addition should be wired for ample artificial light. Wall plugs should be installed at frequent intervals: The extension cords should be of armored cable and with a heavy lamp guard.

The practice in some of the shops is to include the extension cord and guard in the tools issued to the repair men and then hold them responsible for unnecessary breakage.

Ventilated steel lockers should be installed for each man. These should be large enough to allow a lower compartment for tools. Each man should be supplied with such small tools as light hammers, screw driver, common spanner and monkey wrenches, punches, cold chisels, cotter key pullers, pliers, etc., and his receipt taken. All loss or unnecessary breakage should be deducted from his The writer has had this system in effect in a number of shops and has found that it will work out and save a tremendous loss which is due almost entirely to carelessness, and at the same time it insures the men having the necessary too!s with which to perform their

#### Equipment That a Shop Should Have

The class and size of equipment installed will depend largely on what trucks compose the fleet.

For a fleet of ten trucks as described in the early part of this chapter the following equipment will be found to give a good working shop.

The amount of work necessary on wheels of the artillery type is comparatively small unless the trucks are operated in a very hot dry climate. It is only under rare circumstances that the expen-

diture for equipment to care for this class of work would be warranted.

Neither will it be found advisable to install, for the use of small fleets, a solid tire press for the reason that in practi-cally every locality these presses will be found in public tire service stations, and as the pneumatics are installed on the smaller units less use of this equipment will be had.

The forge room should be equipped with a good forge, blower and anvil. The forge should have a capacity for heating 31/2 in. channels.

An arbor press, 46 in. x 30 in., and of not less than 22 tons capacity should be installed. This capacity will allow not only the usual work that is performed by a press, but will allow the straightening of frames, pressing out of hubs and bearings from wheels, etc., as well as testing centers. The drill press should be at least 20 in. This will han-dle all ordinary work. The lathe should be not less than 18 in. swing and 20 in. would be better.

#### Portable Crane Preferable

A portable floor crane, 66 in. long x 36 in. wide, will usually be found preferable to the old type of chain fall or monorail system for lifting and moving motors and lifting rear ends in taking out differen-

A universal "running-in" or "burning-in" stand, which will handle all sizes of motors, should also be installed. An emery grinder will also be necessary.

The above machines should be electric motor driven in place of being driven by belts from line shafts.

One all-metal stationary work bench, 72 in. x 20 in., should be installed with two heavy duty all metal portable benches, 64 in. x 20 in., and one portable universal motor assembly stand.

A portable welding outfit will also be found to be a very desirable piece of equipment.

If all cars in the fleet are equipped with storage batteries a charging outfit should be installed and one or two reserve batteries provided.

It will also be necessary to have a first class service truck completely equipped with crane and ambulance for handling disabled cars and with all necessary tools for road repairs.

There are certain tools which should neither be issued to all men nor left lying around loose in shops, but should be kept in the stock room and charged to the man who takes them out for use. Among the more important of these tools are: Electric drills, two sizes; pipe cutters and dies, small S. A. E. taps and dies, small drills, 1/8 in. to 3/4 in., jacks, heavy hammers, valve grinders and other tools.

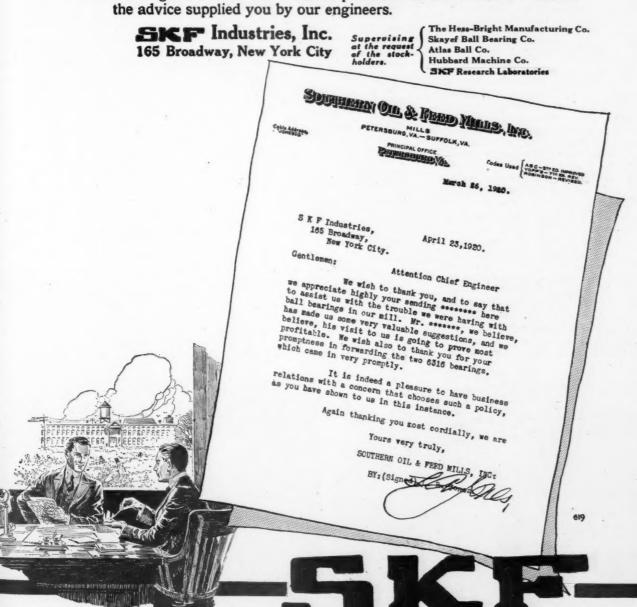


EKP
Research Lahoratory
satablished at Philadelphia to co-operate
with the Gothenburg
Lahoratories in the
study of the Ameriean Manufacturers'
friction problems.

HE technical advice brought you by our engineers embodies the experience of highly trained organizations in all parts of the world in the solving of friction problems.

This international experience is both technical and practical and is acquired in co-effort with the best international research endeavor.

SKF service in America is linked to this international experience. Its tangible evidence is found in products marked "SKF" and in the advice supplied you by our engineers.



Among these products now offered are:

Single row deep groove ball bearings. Thrust bearings. Steel balls. Double row self aligning ball bearings. Transmission equipment.

APRIL

Jumbo

truck

-all

roads

in ne

# Reducing the Standing Time of the Motor Truck to a Minimum

By R. H. STONE, The Lakewood Engineering Company

HE motor truck has today made secure its place as an economical means of freight transportation over short hauls. One explanation underlying this success is the fundamental principle of elimination of rehandling.

A modern freight train will move 3000 tons with a crew of six men. To move the same tonnage by motor truck would require 600 five-ton trucks and at least 600 drivers.

But these figures are not comparable. The service rendered in the case of L. C. L. freight is vastly different. To the charge of transportation by rail must be added trucking costs from shipper to terminal and vice versa, so that with either mode of transportation, the loading and unloading of the motor truck is included and, for rail shipments, the rehandling involved in car loading doubles the manual or mechanical handling. A sufficiently long haul by rail with its lower cost per ton-mile will offset the extra cost for this rehandling. Competent authorities estimate that the minimum profitable haul by rail for L. C. L. shipments is 60 miles.

Whatever may be said pro and con of the restrictions on either the freight car or motor truck in their co-operation in shipping may be tested by the broad principle that the limitations of any mode of transportation are those of its ability to approach the ultimate distribution of the commodity. The ideal transportation would be that which, with but one loading and unloading, would receive its cargo at the last point at which manufacture had contributed to the article's value

and deliver it to the next step in its manufacture or its consumption.

Just as it is physically impossible for the freight train to deliver commodities to every factory door, it is likewise impossible for the motor truck to enter the manufacturing buildings and deposit the raw materials or semi-finished products at the individual machines or on the shelves of the stock room.

The need is apparent for some means of completing the chain of material shipment, which will handle truck deliveries from the bed of the truck to the stock room or plant process with the minimum time and labor. The accompanying illustrations show the possibility in the direction of economical truck loading and unloading by the use of an electric storage battery truck which can elevate or lower its load as well as transport it to the desired point in the plant.

In addition to providing an elevator platform convenient to the level of the motor truck bed on which or from which materials may be easily moved without hand lifting, it is possible to provide movable platforms which can be loaded and then picked up by the elevating truck and set on or off the motor trucks. One of the accompanying illustrations shows the elevating truck placing a box mounted on casters into a motor van. In this instance two manufacturers have co-operated by standardizing on a container which is used at either plant.

For shipment of parts from one plant to another, these containers are filled at the manufacturing machines, transported and set on the motor trucks by the elevating trucks and hauled to the other plant where another elevator truck unit lifts the container off the motor transport and carries it to the desired point in the plant. These containers may be boxes equipped with casters, as in this case, or merely simple platforms on skid legs. Another plant in the Michigan automobile manufacturing district makes rail shipments in these caster box containers. They are collapsible and are returned knocked down when empty.

Probably the most efficient, if not the largest motor truck system in this country is that at Cincinnati operated by the Cincinnati Motor Terminals Co., which, working in conjunction with all the freight terminals, takes care of the transfer of L. C. L. freight. The equipment consists of truck chassis and a number of removable covered bodies. The time required to lift off one body and replace it with a loaded one averages about five minutes. It is in the rapidity of this operation that a large part of the success of the venture lies. The transportation equipment, the truck chassis, is kept busy earning a tariff for the company.

Removable bodies are not always feasible, they require a widely ramified cooperation between consignee and consignor. But all means which are applicable should be adopted to derive the greatest benefits from truck shipping. All interested in the application of the motor truck to this problem of increasing production per unit and reducing the cost of material movement must frequently ask themselves the question—"Has the exploitation of the motor truck been completed until the time for loading and unloading has been reduced to a minimum."





These Views Show the Possibilities of Economical Truck Loading and Unloading by Use of Electric Trucks Which Can Elevate and Lower Loads as Well as Transport Them to the Desired Point in the Plant

# JULIBO

# **DEALERS:**

# Concentrate on a Line of Known, Tested Profit

Jumbo Trucks are consistently profitable to the dealer because they are consistently profitable for the owner.

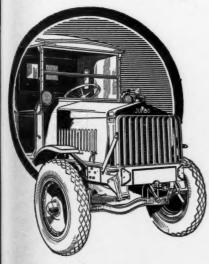
Many Jumbo owners, whose business depends upon trustworthy transportation under unusually difficult conditions, say that the reliability of Jumbo Trucks can always be counted on—and at low cost.

That is an outstanding feature of Jumbo Trucks. They always come through and at reasonable cost. That explains why Jumbo owners are repeat buyers when they enlarge their fleets, why they bring their friends to Jumbo dealers. Jumbo Trucks make money for their owners. Both will make money for you.

The complete Jumbo line—ten models in six capacities—enables Jumbo dealers to serve all requirements with one make of truck, one high quality standard in every size. Write today for our profit plan.

# Jumbo Trucks Always Come Through

The average replacement expense for ALL Jumbo Trucks is less than \$10 per truck per year. Many Jumbo owners with records of 20,000 to 30,000 miles—all kinds of loads over all kinds of roads—have not replaced a single part in nearly four years' hard service.



# NELSON MOTOR TRUCK COMPANY

SAGINAW, MICHIGAN

APRII

# Ohio to Adopt New Model Road Law

(Continued from page 17)

## Restrictions as to Tire Equipment

"No licensed motor vehicle or trailer whose wheels are equipped with solid rubber tires having rubber of any tire less in thickness than herein prescribed; nor any vehicle whose wheels are equipped with solid rubber tires having less rubber width than herein prescribed shall be operated on the highways of this state."

mittee, in this connection, strongly urges adoption of "load plates" for all motor trucks, with the requirements under law that they appear on all vehicles, and be so worded as to give all the information needed as to load weights, tire width, cushioning medium of worn solid tires,

It is also suggested that a classification

uniform tread of such portions as actually come in contact with and touch the road surface."

The law regulates the load to 800 lb. per prescribed tire-inch. On a solid single tire whose tread measures six inches in breadth this would mean a load of 4800 lb. according to the Ohio legislator's way of thinking. But when the tire wears down, the area in direct contact with the road becomes broader. Hence, with a solid tire wearing down to leave but % of an inch of cushioning medium, the road contact area of the tire would measure 81/2 inches, thus permitting a far greater load when it has been proven that the more the tire is worn down, the lighter the load must be to prevent greatly increased road impact. Were the width measured along the steel tire channel, or between the flanges of the rim, a more equitable weight would be allowed while there would also be imposed restrictions causing the load to be lighter and the truck's speed slower when the cushioning medium decreased through wear, so as to hold down the increased degree of road impact arising from a worn tire.

This same Ohio bill reads: "And in case of pneumatic tires, the total width of all tires on all wheels shall be the actual diameter of all such tires measured at the narrowest portion thereof when inflated."

The motor vehicle conference committee and the author of the bill himself in fact, cannot tell what is the "narrowest diameter of an inflated pneumatic truck tire"

There is another bill before the Ohio general assembly which would provide that no truck with load weighing in excess of eight tons, be permitted to travel the highways. This would drive every five-ton truck off of Ohio's highways.

It is the Motor Vehicle Conference Committee's object to aid in gaining constructive legislation. The committee is not antagonistic to good roads movements —rather strongly in support of them.

Weight on Both Wheels of Axle	Rubb	mum Thickness of er Measured Abo side Edge of Stee Tire Channel	ve	on E Widt Me	m Size of Tire Each Wheel h of Rubber asured at Tire Channel
Under 3,000 lbs.		3/4"		3	1/2" single
3,000 to 4,500 lbs.		3/4 "		. 4	" single
4,500 to 6,000 lbs.		1"		5	5" single
6,000 to 7,500 lbs.		1"		6	3" single
7,500 to 9,000 lbs.		1"		. 7	" single
9,000 to 12,000 lbs.		11/4"		10" sin	gle or 5" dual
12,500 to 17,000 lbs.		11/8"			gle or 6" dual
17,000 to 22,000 lbs.		1%"		14" sin	gle or 7" dual

#### Restrictions as to Speed

"No vehicles of the kinds and weights enumerated in this section shall be operated on the open country highways, suburban streets or urban streets of this state at a greater rate of speed than herein prescribed. For the purpose of this Act an open country highway shall be regarded as a highway or portion thereof beyond the corporate limits of any city and greater than one-quarter of a mile in length along either side of which the buildings shall average more than 300 ft. apart; a suburban street as such highway or portion thereof less than one-quarter of a mile in length on either side of which the buildings average less than 300 but more than 50 ft. apart; an urban street shall be such highway or portion thereof other than an open country highway or suburban street.

#### Speed Limits

## (A) Vehicles Equipped with Pneumatic Tires

Weights on Both Wheels of Axle	Open S Country m.h.p.		Urban Street m.h.r
Under 3,000 lbs.	30	20	15
3,000 to 7,500 lbs.	30	20	15
7,500 to 9,000 lbs.	27	20	15
9,000 to 12,500 lbs.	24	20	15
12,500 to 17,000 lbs.	24	20	15
17,000 to 22,000 lbs.	24	20	15

# (B) Vehicles Equipped with Solid Rubber

Weights on Both Wheels of Axle	Open S Country m.p.h.		Urbar Street m.p.h
3,000 to 4,500 lbs.	20	20	15
4,500 to 7,500 lbs.	16	16	15
7,500 to 9,000 lbs.	14	14	14
9,000 to 17,000 lbs.	12	12	12
17,000 to 22,000 lbs.	10	10	10

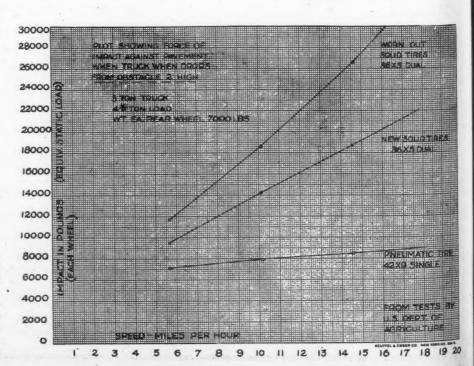
These recommendations must necessarily be followed by ways and means of exercising the authority of the law and of restricting truck loads and speeds according to their tire equipment. The committee suggests that authorities either be told what the load is on a certain wheel or axle, or they must take the vehicle and weigh it. To simplify the matter the com-

be made according to weights in order to properly take into account all conditions of motor vehicle operations, and to recognize certain classes of axles according to the weight of both wheels.

#### What Happens When Legislators Lack Facts

The need for some sort of constructive ground work in framing vehicle legislation has arisen in striking manner in Ohio. A bill has been introduced into the Ohio general assembly to regulate the weight according to the inch-width of actual tire contact with the road, instead of governing the weight by the tire width measured between the flanges of the rim.

This proposed Ohio law, for instance, reads "The total width of a tire on a wheel shall be, in case of solid tires, the actual width in inches of all such tires measured across the narrowest point of





# Only \$1950

# For the Standard 1½ Ton Chassis

# Some of the Standard Units Used in This Model

Continental Motor Model N, 33/4" x 5".

Timken Front and Rear Axles and Bearings.

Spicer Universal Joints and Propeller Shafts.

Eisemann Magneto.

Stromberg Carburetor.

Brown-Lipe Transmission, Clutch and Control.

Perfection Springs.

Long Spiral Tube Cast Tank Radiator.

Ross Steering Gear.

AT this price the Standard 1½ ton (pay load capacity) worm drive truck represents the greatest value in the motor truck world today.

Made by experienced and long established truck manufacturers who use only standard nationally known units in its construction the Standard one and a half ton truck at the low figure of \$1950 (solid tires) or \$2150 (6 in. pneumatic cords all around) is by far the most unusual offering ever made. That it will receive a wonderful reception at the hands of the buying public is a foregone conclusion. Our dealers everywhere are preparing for a great rush of business on this model.

We have a few territories open and have a good proposition to offer to live dealers. If you are interested write or wire to-day.

STANDARD MOTOR TRUCK CO., Detroit, Mich.



And it is the committee's prediction that the necessity for uniformity of state vehicle laws soon will become apparent.

The various findings and recommendations of the committee are now before the Ohio Legislature and it is considered likely that Ohio will become the first state to adopt the model vehicle law as outlined by the motor vehicle conference committee. If this materializes the movement will be directed along lines of having other states revise present statutes so as to produce a certain degree of uniformity in vehicle regulations as to limitations of truck loads, speed and tire equipment.

The members of the Ohio sub-committee which have been responsible for the recommendations included in the new Ohio road law which this state is soon to adopt are as follows: C. C. Janes, of Columbus, secretary of the Ohio State Automobile Association and representing the A. A. A.; Harry Hill, of Akron, rep-

resenting the M. A. M. A.; T. R. Dahl, of the White Co., representing the N. A. C. C. (he is chairman of the sub-committee); E. J. Shover, of Columbus, of the Ohio Auto Trades Association representing the N. A. D. A.; Harry G. Palmer, Goodyear manager of tire sales, Akron, representing the Rubber Association of America, and H. E. Bruce, of the Troy Wagon Works, Troy, Ohio, who are representing the Trailers' Association of America.

# Are Salesmen Made or Born?

By WARREN FENTON

HERE are certain obstacles that seem to impede progress of some salesmen. What some of these obstacles are and how they can be surmounted is what I want to bring to the mind of the reader. It is often said, "Salesmen are born" and "he is a natural born salesman." These statements could not be more erroneous. If this were true one would lose his incentive to progress and would say, "What is the use of trying, for I know I am not a born salesman, consequently, I can never make a success as a salesman." If the work of a salesman is loved, there is no power on earth that can hinder success.

We will say the article is a motor truck. The salesman first must not only believe he has the best truck for the money, but he must know it beyond a shadow of a doubt. You must first sell yourself through and through. If this can not be done with the truck you are trying to sell you just might as well give up the idea of making a success, for this is one of the basic principles of success as a salesman. "No man can inspire confidence in others who has not confidence in himself."

The organization you are with, is the next consideration and equally as important. The success of an organization depends entirely upon co-operation and co-operation should begin to be applied and practiced by each individual. It is true we do not all see alike, but if we endeavor to come in tune with or harmonize ourselves with those principles of our organization which we do see as just, we render our co-operation intact. Co-operation in little things is the basis of co-operation in big things.

To co-operate with an organization it is first necessary to co-operate or co-incide with individuals. To come into harmony with some people's thinking and acting, owing to their different views of noumenon and phenomena from those of yours may be rebellious to you and make you feel that you cannot co-operate with them. In other words, you are seeing nothing but discord in them, a most self-ish outlook on life—the world is wrong, I am right—way of looking at things.

Every living human being has some

good trend of philosophical thinking. It is there for you to see, recognize and cooperate with—small as it may be if recognized and co-operated with, will grow
and bloom as would a rose by giving it
sunshine and water. This more perfect
idea, held constantly before people's
minds, must have a benign and elevating
influence upon the character of organizations as well as individuals and will lift
men ultimately to the understanding that
our ideals form our characters, that as a
man "thinketh in his heart, so is he."

We now have a synopsis of the principles that back up and help to make the salesman. He is absolutely sold on the motor truck, knows conclusively his competition cannot waver this belief. He realizes the motor truck is meeting a great need in transportation. He knows his company has confidence in him to the limit. He feels this confidence and in turn this inspires co-operation in him.

The salesman realizing his co-operative backing enters Mr. Buyer's office, full of enthusiasm. Now the application of salesmanship must be demonstrated. It is up to him alone to convey his representation to the prospective buyer. Webster's dictionary defines representation as "the exact of exhibiting the image of," so the salesman endeavors to exhibit or reflect in his conversation the harmonies of the basic principles of transportation, his motor truck and organization. Here's where a salesman must use great discretion.

There are certain keys whereby a man can open another man's heart. None of these keys will operate with antagonism, lies, promises that cannot be fulfilled, etc., but they will operate with truth, consideration, justice, courtesy and brotherly love

It is every salesman's sole object to have his buyer believe what he tells him, thus it should be the primary thought in the salesman's mind to apply a means whereby he can possess this confidence. I cannot emphasize and dwell too much upon this point of gaining confidence. Confidence is the power in back of sales. Confidence is the backbone in a successful business. Confidence is in hand with faith and a stepping stone to understanding and knowledge.

The art of being able to gain this confidence is what every man can accomplish if he will apply the most simple principles of life such as truthfulness, sincerity and frankness, coupled with a joyous sense expressed in a smiling countenance.

The above characteristics on the part of the salesman, applied intelligently while conversing with his buyer, will change the very atmosphere from that of chaos to harmony, will demonstrate the old and true saying, "smile and the world smiles with you," and will tear down malicious barriers that seem to impede action, replacing them with the foundation stone of "brotherly love," mortised with a confidence that cannot be shattered by the storms of competition.

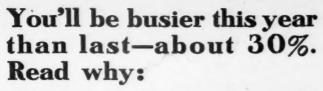
Another important point comes in at this time and that is "when and what to speak." It is very true much is said that should not have been said and much not said that should have been said. However, it is better to say too little than too much.

Discretion should be used in making statements. Some unthoughtful statement may create antagonism, though your assertion be true—your buyer may not be ready as yet to receive such statement, thus causing unnecessary obstacles to overcome.

Your statements are impressive in proportion to your perception of the buyer's receptivity of your thought. Your perception of the buyer's thinking may be limited, so naturally limit your statements to what you know he can digest. Endeavor to find out what he is thinking by tactful questioning. Accomplishing this it is giving you a basis to work upon and enabling you to demonstrate the harmonious fact of "thinking together" or the "unity of thought."

The cause of any condition is found by analysis. By self-analysis we find the cause of personal inability. Ability is manifested by "separating the tares from the wheat" so that wheat may grow.

What is needed in the commercial world is less of self and more of honest purpose. Nothing can be lost by giving all that is in you, but much will be gained. It is the law of compensation.



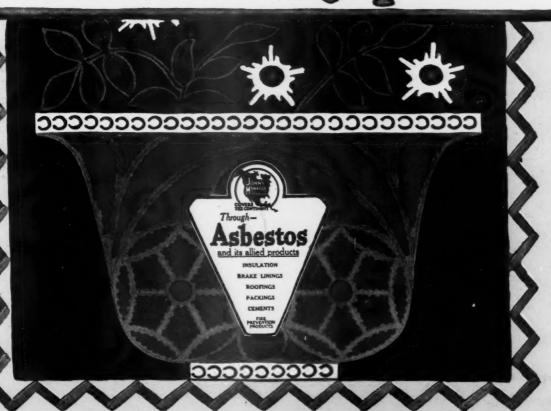
ONE year ago there were about 7,000,000 automobiles running over the roads. It was from these cars that your share of the repair business came. Brake lining, clutch facing, packing, fuses and speedometers in tons and thousands were consumed by this great motor fleet.

Since then there have been over 2,000,000 cars added by last year's new car output.

Compare the two years: 1921—nearly 30% more prospects, help easier to get and deliveries good. Everything looking better than 1920 which was called the best year yet.

Johns-Manville automotive products: Clutch Facing, Speedometers, Hubodometers, Service Sheet Packing, Seigelite Sheet Packing, Mogul Twisted Packing, "Noark" Automobile Lighting Fuses, Friction Tape, Brake Lining.

# JOHNS-MANVILLE Automotive Equipment



But now you get Clutch Facing right out of local stock

THE service man who holds up a clutch renewal job through lack of proper rings—well it isn't our fault. For we've put stocks of facings in all the cities listed on page 4—one right near you.

And here's another help for you — the making of a facing with compressed asbestos, machined to accuracy —a development from Johns-Manville research in brake blocks for industrial cranes.

Ask the Johns Manville distributor to explain this new clutch ring to you when he calls.

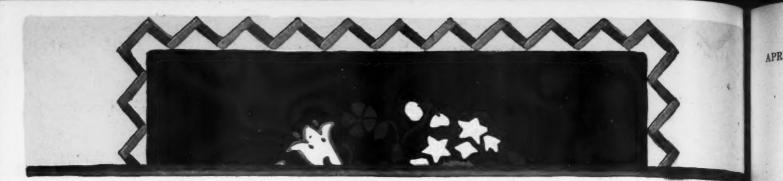
Your customers want to buy Non-Burn Brake Lining

NON-BURN ASBESTS

WHETHER they know it or not your customers want Johns-Manville Non-Burn Asbestos Brake Lining because

- -they want a lining that has maximum gripping power.
- -they want one that cannot char when overheated
- —they want one having resistance to oil, grease and gasoline
- -they want one that has maximum durability.

In other words, when you furnish Johns-Manville Non-Burn you have met these exact specifications of what your customer has a right to expect.



# Pick your Distributor from this List

The I. J. Cooper Rubber Co., Birmingham Moore-Handley Hardware Co., Birming-

Johnson Tire & Auto Co., Montgomery Arkansas

Crow-Burlingame Co., Little Rock

Chanslor & Lyon Co., Fresno Chanslor & Lyon Co., Los Angeles Featherstone, E. A., Los Angeles McCoy Motor Supply Co., Los Angeles Waterhouse & Lester Co., Los Angeles Weinstock-Nichols Co., Los Angeles Western Rubber & Supply Co., Los Angeles

Chanslor & Lyon Co., Oakland Weinstock-Nichols Co., Oakland Kimoali-Upson Co., Sacramento P. W. Gavin Company, Inc., San Diego Chanslor & Lyon Co., San Francisco Electric Appliance Company, San Fran-

McCoy Motor Supply Co., San Francisco Waterhouse & Lester Co., San Francisco Weinstock-Nichols Co., San Francisco

Auto Equipment Co., Denver Foster Auto Supply Co., Denver Motor Accessories & Tire Co., Pueblo

nnecticut Motor Tire Service Co., Putnam Hessel & Hoppen Co., New Haven

District of Columbia National Electrical Supply Co. Rubel, Chas., & Co.

Baughman Company, Norman G., Jack Baughman Company, Norman G., Miami

Baughman Company, Norman G., Tampa Alexander-Seewald Co., Atlanta

Cody Co., W. E., Columbus The I. J. Cooper Rubber Co., Atlanta Illinois

Automobile Supply Co., Chicago Chicago Automobile Supply House Chicago

Electric Appliance Company, Chicago Motor Car Supply Co., Chicago Tenk Hardware Co., Quincy Universal Automotive Supply Co., Chicago Washington Auto Supply Co., Washington

Indiana Orr Iron Co., Evansville

The I. J. Cooper Rubber Co., Indianapolis The Gibson Co., Indianapolis

Cedar Rapids Pump Co., Cedar Rapids Sieg Co., Davenport Herring Motor Co., Des Moines

M Auto Co., Waterlop

Northwestern Auto Supply Co., Pocatello

Massey Hardware Company, Wichita Southwick Auto Supply Co., Topeka Watson-Weldon Co., Selina
The Frank Colladay Hardware Co.,
Hutchinson

Peaslee-Gaulbert Co., Louisville

Louisiana

Electric Appliance Company, New Orleans Shuler Auto Supply Co., New Orleans Maine

The Farrar-Brown Company, Inc., Port-

Maryland

Auto Supply Co., Baltimore Coggins & Owens, Baltimore

Massachusetts

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Michigan

Bowman Gould Co., Detroit Roehm & Davison, Detroit Tisch Auto Supply Co., Grand Rapids

Janney-Semple-Hill & Co., Minneapolis Kelly-Duluth Co., Duluth Minneapolis Iron Store Co., Minneapolis Reinhard Bros. Co., Minneapolis Williams Hardware Co., Minneapolis Nicols, Dean & Gregg, St. Paul

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Joplin Supply Co., Carthage Joplin Supply Co., Joplin The Faeth Company, Kansas City Ayers Farmer Auto Supply Co., St. Joseph Beck & Corbitt Iron Co., St. Louis Fred Campbell Auto Supply Co., St. Louis Geller, Ward & Hasner, St. Louis Rogers & Baldwin Hdwe. Co., Springfield Joplin Supply Co., Webb City

Nehraska

Nebraska Buick Auto Co., Lincoln Western Auto Supply Co., Omaha

Nevada

Nevada Auto Supply Co., Reno

New Hampshire Thompson & Hoague Co., Concord

New Jersey Economy Auto Supply Co., Nawark

New York

Albany Hardware & Iron Co., Albany Martin Evans Co., Brooklyn Strauss Co., Joseph, Buffalo Barker, Rose & Clinton Co., Elmira Picard & Co., Inc., A. J., New York Roberts Electric Supply Co., H. C.

North Carolina

Carolinas Auto Supply House, Charlotte North Dakota

Grant, J. D., Fargo

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The I. J. Cooper Rubber Co., Cleveland The Penn. Rubber & Supply Co., Cleve-

The I. J. Cooper Rubber Co., Columbus The Penn. Rubber & Supply Co., Columbus

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Joplin Supply Co., Commercia Severin Tire & Supply Co., Oklahoma City Joplin Supply Co., Tar River Tulsa Motor Supply Co., Tulsa

Wiggins Company, Inc., Portland Chanslor & Lyon Co., Portland Waterhouse & Lester Co., Portland

Pennsylvania

General Motor Supply Co., Altoon The Penn. Rubber & Supply Co., Erie Front Market Motor Supply Co., Harris-

Johnstown Auto Co., Johnstown The Penn. Rubber & Supply Co.. Oil City Berrodin Rubber Co., Philadelphia Gaul, Derr & Shearer Co., Philadelphia Motor Accessories Co., Allentown Roberts Electric Supply Co., H. C., Philadelphia

Dyke Motor Supply Co., Pittsburgh Lansing Bros., Inc., Scranton General Auto Supply Co., Lancaster General Auto Supply Co., Lebanon General Auto Supply Co., York

Belcher & Loomis Hardware Co., Providence

South Carolina

Franke Co., Inc., C. D., Charleston

L. & L. Motor Supply Co., Sloux Falls

Southern Auto Supply Co., Chattanooga The I. J. Cooper Rubber Co., Knoxville The I. J. Cooper Rubber Co., Memphis Ozburn-Abston & Co., Memphis Auto Supply Co., Nashville The I. J. Cooper Rubber Co., Nashville

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Electric Appliance Company, Dallas The Southern Equipment Co., Dallas Tri-State Accessories Corp., El Paso Meyer Co., Jos. F., Houston The Southern Equipment Co., Houston The Southern Equipment Co., San An-McCauley-Ward Motor Supply Co., Ware

Inter-Mountain Electric Co., Salt Lake Motor Mercantile Co., Salt Lake City

Virginia Owens-Merritt, Danville Piedmont Hardware Co., Danville Crump Co., Benj. T., Richmo Meadows-Price Co., Roanoke

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West Virginia

Williams Hardware Co., Clarkesburg

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Andrae & Sons Co., Julius, Milwaukee Shadbolt & Boyd Iron Co., Milwaukee Tisch Auto Supply Co., Milwauke Western Motor Supply Co., Milwaukee

Alberta Motor Car Supply Co., Calgary Motor Car Supply Co., Edmonton Marshall Wells Co., Limited, Edmonton The Chapin Co., Ltd., Calgary Wood, Vallance & Adams, Ltd., Calgary British Columbia

Wood, Vallance & Leggat, Ltd., Van-couver

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Wood, Vallance, Ltd., Winnipeg Whites, Limited, Collingwood

Wood, Alexander & James, Hamilton Just Motors Limited, Ottawa Wood, Alexander & James, Toronto Bowman Anthony Co., Windsor

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JOHNS-MANVILLE, INC., Madison Ave., at 41st St., New York City

Branches in 66 Large Cities

For Canada: CANADIAN JOHNS-MANVILLE CO., Ltd., Toronto

# A Much Valued Service Rendered by a Railway Motor Bus Line

HE Pittsburgh & Susquehanna Railway Co. at Pittsburgh, Pa., very recently purchased a Republic truck equipped for railway

passenger service.

The Pittsburgh & Susquehanna Railway Co. found it necessary to establish passenger car service on its fourteen miles of railroad track between the towns of Philipsburg and Ramey, Pa., to accommodate its employes and their families, also the public living along this line; therefore a railway motor bus was put in operation. Formerly the only means of transportation was by automobile. This mode of travel was not satisfactory as there was no motor bus running on

After careful consideration, Mr. Rowland, president of the Pittsburgh & Susquehanna Railway Co., purchased this railway motor bus, which was installed August 17, 1920.

Following is a report covering fiftytwo days of operation:

Total mileage	6032
Gross revenue\$2	2,120.95
Total expense including gas-	
oline, oil, grease, labor,	
maintenance and repairs 1	1,522.66
Net cash earnings	598.29
Summary:	
Gross earnings per mile	.351

Cost of operation per mile.. Net earnings per mile ..... The Pittsburgh & Susquehanna Rail-

way Co. did not expect to make a profit from this method of transportation, as it was only their intention to accommodate the people living along this line. This railroad is located in a coal mining district. Some of the largest coal mines in the United States are situated along its

A timetable was printed showing the schedule of runs to be made. This schedule calls for four round trips every day. The length of the run one way is four-teen miles, including the "Y" at each end of the road. There are twelve regular stops, also ten or twelve stops not shown on the schedule, such as mines, switches, etc. The schedule calls for one hour running time between terminals. This allows for ten minutes delay at each end. Daily passenger service is maintained, including Sunday. The road bed between Philipsburg and Ramey has a good many curves and is without a mile of straight track, with several one and one-half per cent grades. Still an average speed of 25 m.p.h. can be maintained.

The rate of fare is five cents per mile. Average number of passengers one way, thirty. Between five and six o'clock at night it is necessary to carry as high as fifty or sixty passengers at one time, which necessitates crowding them into the aisle and all available standing room.

Following is a brief description of this

Republic railway bus: It is a Republic Model 19, 2½-ton standard chassis equipped with Sewell rear wheels and demountable steel railway rims. The front truck axle is removed from the chassis and substituted with four-wheel pony truck. The front springs are bolted to a swivel bolster plate on the pony truck, which allows the pony truck to follow the curves. A cow catcher is mounted on the front of pony truck.

The engine is equipped with starting

and lighting equipment.

The special bus body has a seating capacity of twenty-eight passengers. The body is divided into two compartments, the rear compartment being a smoking room, and is fitted with a circular seat around the back. The front compartment is equipped with double, rattan-cane car seats. Push buttons are conveniently arranged between the windows for signalling the driver.

Entrance to the bus is at the right side in front and the door at this entrance is controlled from the inside by the driver. Sand boxes are arranged in front of the rear drive wheels and controlled by a hand lever operated by the driver. A locomotive bell is mounted in front of the cab.

The Pittsburgh & Susquehanna Railway Co. recently augmented the size of this line by purchasing a trailer equipped with railway rims and special box car body, for use in connection with the railway passenger truck. The railroad company found it necessary to install this trailer to take care of their express and baggage business. The trailer is connected to the bus by a spring drawbar.

This line has proved so successful that the Pittsburgh & Susquehanna Railway Co. expect to purchase two more for use on the same line.

A good many railroads throughout the country have a number of miles of track not in use. This type of equipment fits in so nicely, with the least expense, that in the near future a large number of similar railway motor bus trucks are expected to be put into operation.

# Boston Engineer Heads Hartford Automotive Parts Co.

R. E. Carpenter, a well known Boston engineer, has been elected president of the Hartford Automotive Parts Co., Russ and Lawrence Sts., Hartford, Conn., J. McA. Johnson having resigned because of ill health. Mr. Johnson has also resigned from the board of directors.

For 15 years Mr. Carpenter was connected with the Tate-Pierce Manufacturing Co., Woonsocket, R. I., and later with the Aluminum Castings Co., of Cleveland. Early in 1920 he became associated with Hollister-White & Co., of Boston. He is a member of the S. A. E. and the Engineers Club of New York.

James M. Carney has resigned as general manager and chairman of the board of directors. L. J. Harley, Jr., of Springfield, Mass., has been elected vice-president of the company and H. W. Bigelow was re-elected secretary and treasurer.

# British Commercial Car Show to be Held in October

Under the usual order of things the British commercial car industry holds its big show at Olympia in London once in every three years, but although one of these exhibitions was held last year it has been decided to break the rule and hold another this year, probably from the 13th to the 22nd of October next.



One of the Tributary Lines of the Pittsburgh and Susquehanna Railway Co. This line provides schedule service to the habitants living along its fourteen-mile route. In accordance to the time table, four round trips are made daily by this railway motor bus, which is a 2½-ton Republic

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# New England Roads Have Cause for Worry in Truck Competition

AILROAD executives in New England are confronted by a problem that may well be likened unto the Gordian knot. The perplexing equation in the problem is the flexibility of motor transportation. Motorized transportation had already taken a large chunk of the short haul business from the railroads as a direct result of the demoralization that had its inception from and which continued during the period after the war. And now these roads. despite their former rate increases, are again compelled to increase the rates in order to cover the operating costs which are much in excess to their present revenues. But if they do the popularity that already obtains in favor of motorized hauling over short hauls will be widened. Realization of these conditions is causing much anxiety and thought. Conferences have resulted in a discussion of the whole problem with facts and figures about rates, time consumed and tonnage available. The Boston News Bureau, in a survey of the New England traffic situation, definitely established the motor truck as a successful competitor, no longer a bidder for some of the railroad's tonnage.

This discussion reads as follows:
The New England railroads are caught upon the horns of a dilemma. A further increase in freight rates will divert more business to the motor trucks. On the other hand they may not be able to effect a prompt cut in wages.

That they must in some way increase net earnings is apparent. It is estimated that under present conditions they will, in the year to August 31, next, fall more than \$27,000,000 short of meeting fixed charges.

The New England roads have asked a further increase of 10 per cent in freight and passenger rates as a temporary emergency measure calculated to raise about \$18,000,000 additional revenue. This, together with a pool from the trunk lines of about \$15,000,000, if it reaches that much, would do the trick.

But the other factor in the situation is the shipper and he protests loudly, contending that the New England railroad executives have gone over his head in asking the governors of the New England states to support the move and find a way out of the emergency.

He declares that rates are already so high in New England as to have driven a very great amount of business to the motor truck which is cheaper, more rapid and generally more satisfactory for transportation over distances up to 50 miles.

A further increase in freight rates would be quite certain to drive still more business to the truck increasing the competition of gasoline with steam. The question for the railroads is whether rates may not be pushed to a point where diminishing returns result.

Shippers declare that the New England railroads should have started months

a great deal of business to the motor truck and most of it never returned, as the higher rates were soon put into effect, rendering transportation by truck cheaper.

In regard to delays on the rail lines cases may be cited such as shipments taking 215 hours between Bridgeport and New York, a distance of 56 miles; four or five days between points in Connecticut less than 40 miles apart, and in other instances from two to seven days to move a distance of from 50 to 100 miles.

All this may be doubtless explained by the fact that the railroads were trying to perform a prodigious task beyond their immediate facilities for handling, but the fact cannot be overlooked that these delays inevitably drove a lot of business from the rails.

When it is considered how much the class rates by rail for short distances have increased in New England better appreciation may be had of why motor truck transportation has become cheaper up to 50 miles. Rates for distances up to 50 miles have increased as much as 500 per cent since 1913 as shown:

#### Comparison of Rates

			Motor tru (per 100 l	
Boston to Lynn (shoe findings)	341/2	cents	22 ce	nts
North Dighton to Boston (textiles)	37	cents	35 ce	nts
Boston to Fitchburg (confectionery)	46	cents	40 ce	nts
Lowell to Boston (on multitude of articles)31	to 46	cents	30 to 40 ce	nts

ago to reduce wages, a move which they are just undertaking. The truth is, however, that the New England roads felt that they could not very well proceed alone in this matter.

Several factors aside from high rates have caused diversion of short-haul traffic from railroads to motor trucks. Even after the war, railroad service, due to one condition and another, was greatly upset. It could hardly have been otherwise and this continued practically up to the summer of 1920 when things began to straighten out. But there is no question that the period of demoralization diverted

The largest percentage of increase is in the shorter hauls, 10 to 25 miles. Of course, that is the class of business that the New England roads have contended was unprofitable. It is a well known fact that railroads make their money chiefly on long hauls. That, of course, is the fundamental difficulty in New England—the short haul and cost of handling the business.

In a great many instances the cost of transporting by truck is less than cost of freight between stations. The truck, moreover, takes goods from the door of the shipper to the consignee, whereas the railroad shipment must be taken to or from the station which adds 15 to 25 cents per 100 lb.

We understand that a shipment of lumber, 3000 board feet, can be made from Boston to Fall River, a distance somewhat over 50 miles, by motor truck for about \$25, whereas the same shipment by rail would cost about \$34.

On September 1, 1920, there were 48,000 motor trucks registered in Massachusetts. Regular truck lines have been established between some points. The American Woolen Company, it is understood, does practically all its shipping between Boston and Lawrence by truck. Thousands of concerns all over New England are now utilizing trucks to a very great extent.

It is a question of how much of this short haul business the New England railroads are prepared to sacrifice by further increase in rates, for it appears it will mean in the aggregate a loss of millions of dollars in revenues.

# Rates Are Shown in Cents Per One Hundred Pounds

10 miles:						
Classes:	1	2	3	4	5	6
1913	7 .	7	6	5	41/2	41/2
1921	381/2	321/2	26	$19\frac{1}{2}$	$13\frac{1}{2}$	11
Per cent increase	450	364	333	290	200	144
Classes:	1	2	3	4	5	6
1913	7	6	6	5	5	5
1921	42	351/2	28	21	141/2	12
Per cent increase	500	491	366	320	190	140
25 miles:						,
Classes:	- 1	2	3	4	5	6
1913	10	9	9	8	8	7
1921	46	39	31	23	16	13
Per cent increase	360	333	244	187	100	85
50 miles:	1	9	9	A	5	6
Classes:	15	13	11	9	9	. 9
1913				271/2	19	15
Per cent increase	54½ 263	$46\frac{1}{2}$ 257	$36\frac{1}{2}$ 231	205	111	72

# Truck Indispensable Link in the Cantaloupe Marketing Scheme

Transporting 8500 carloads of crated cantaloupes from the fields to the refrigerator cars is the man's sized job handled last summer by motor trucks in the Imperial Valley in California. Nowhere in the country is the motor truck a more necessary means of transportation than in this garden spot, from whence are shipped the earliest melons marketed in the United States. The first crates, reaching the big cities over a month ahead of any other melon, are sold for as high as \$60 to \$80 per crate of 48 melons. The first three or four hundred carloads average over \$12 per crate and the rest of the crop commands top market prices.

Hundreds of motor trucks carry practically all of these crated melons from the fields to the shipping points at Brawley, El Centro, Westmoreland, Heber and other points along the railroad and the solid train loads of refrigerator cars roll out of the valley eastward in long processions during the season. About 400 carloads per day are shipped during the peak of the season.

# Merchants' Association Will Prevent Motor Truck Abuses

The condemnation of overloading and overspeeding of motor trucks has taken the form of resolutions passed by the Merchants' Association of New York working through its special committee on highway development.

Says the report:

"The cost of maintenance of our highways under ordinary conditions is rapidly mounting and imposing heavier burdens upon the taxpayers each year. It is quite certain there will be no diminution in the use of heavy motor trucks as a facility of transportation. On the contrary, the use of that type of vehicle on the highways outside of cities will un-doubtedly increase. Even when these heavy motor trucks with ordinary loads are operated by careful and skilled drivers and at moderate rates of speed, the wear and tear on road surfaces is considerable, and when overloaded and driven at a high rate of speed they are a menace to other traffic besides causing great damage, and in many instances actual destruction to our highways.

"If our highways are to perform most efficiently their economic function, and the development of the motor truck as a permanent, essential and economica! facility of transportation assured, these practices and abuses must be corrected."

The report ends with the following recommendation: "Therefore, be it resolved, by the Merchants' Association of New York, that the practice of overloading motor trucks and of operating them at excessive rates of speed on the public highways be and is hereby most strongly condemned; that a more rigid enforcement of the existing laws prohibiting such violations should be given; and that in localities where the overloading and overspeeding of motor trucks is not now specifically prohibited, adequate laws should be promptly enacted and rigidly enforced."

# Western Tour Planned for Motor Truck Education

A trip which promises to be of inestimable value to the automobile industry and most particularly to the motor truck world, is to be made by Ezra W. Clark, of the Clark Equipment Company, with the expressed purpose of showing the people of the West the utilitarian value of motor truck transportation. Mr. Clark will take with him, the twelve paintings depicting "The Spirit of Transportation."

The tour is designed to accomplish four things: First, to give the dealer a view of the important service he is rendering to the community; second, to crystallize the sentiment that industrial activity is increasing; third, that the automobile business is not only a legitimate business and must be provided with ample credits to care for its growing needs; fourth, to establish in the public mind a knowledge of the importance of automotive industry.

The trip is being made in the interests of the National Automobile Dealers' Association, although the expenses for the campaign are being borne by the Clark Equipment Co. Mr. Clark will visit the following cities on the dates names: Portland, Ore., April 15; Sacramento, Cal., April 21; San Francisco, Cal., April 27; Los Angeles, Cal., May 4; San Diego, Cal., May 11; Salt Lake City, Utah, May 18; Denver, Colo., May 25; Omaha, Neb., June 1.



Above: Loading the Crates. No Side Stakes Are Used, so That Several Hundred More Pounds of Melons May be Carried.

Right: A "Tarp" is Stretched Over the Crated Melons to Protect Them From the Sun in Their Ride to the Shipping Point.

Motor trucks are kept busy during other seasons in the Imperial Valley hauling cotton, onions, watermelons and all manner of agricultural products, which grow at their best in this red-hot, below the sea level valley. It is no place for horses, for the temperature is very hot during the summer, but motor trucks work day and night without injury.

Practically all trucking is done by contract haulers. Few ranchers own trucks for this work.



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#### Personal Items

F. E. Badger, formerly general manager of the Canton Plant of the Standard Parts Co., has joined the staff of the Detroit Steel Products Co., of Detroit, Mich.

Murray Bird, of Rockford, Ill., has been appointed Rockford branch manager of the Reo Motor Car Co., to succeed H. H. Quigley, who has become sales manager of the Chicago district.

J. W. Clayton, for several years manager of the Truck and Tractor Dept. of the Winerich Motor Sales Co., San Antonio, Tex., has severed his connections with that firm to join the Eggleston Oil Corp. of San Antonio, as sales manager.

Frank H. Egan has been placed in charge of the manufacturing department of the Southern Motors Manufacturing Association, Ltd., Houston, Tex. He was for eight years production manager of Nordyke & Marmon Co., Indianapolis.

Lou Gordon, former chief engineer of the Bethlehem Motors Corp. at Allentown, Pa., has become superintendent of the Belmont Motors Corp., Lewistown, Pa.

C. A. Grainger, formerly factor representative of the southeastern district, has been promoted to district sales manager of the American Hammered Piston Ring Co., Baltimore, Md., covering Texas, Missouri, Kansas, Arkansas and Oklahoma.

James C. Griven has recently joined the forces of the Miller Rubber Co., as special eastern representative with headquarters in New York. He was formerly connected with the Philadelphia, Richmond and Pittsburgh branches.

Mark E. Hamer has been appointed advertising manager of the Martin-Parry Corp., with headquarters in the Indianapolis office.

L. Grant Hamilton, in charge of advertising of the Federal Motor Truck Co. of Detroit, has joined the staff of the Akron Advertising Agency of Akron.

E. J. Hermann has been advanced from the position of assistant sales manager to that of sales manager of the territory handled from the Indianapolis plant of the Martin-Parry Corp., of York, Pa., and Indianapolis, Ind.

Miss Helen Jones has been added to the selling force of Morgan-Woodward Co., San Antonio, Tex. The firm deals in Ford passenger cars, trucks and tractors.

F. J. Lane, formerly of Dodge Bros., purchasing department, has been announced as sales manager of the General Spring & Wire Co., Detroit, Mich.

Raiph Leavenworth, advertising manager of the Standard Parts Co., of Cleveland, leaves that connection to take a position as director of personnel with S. L. Weedon & Co., Cleveland, O.

Harry E. Marshall has been appointed Pacific Coast representative for the Mueller Electric Co., of Cleveland, manufacturer of Universal battery and test clips. He will maintain offices and warehouses at 332 Leavenworth St., San Francisco.

W. R. Melcher, formerly eastern representative of the Gemco Mfg. Co., has returned to the C. A. Shaler Co., Waupun, Wis., where he will act in the capacity of special jobbers' service representative.

D. S. Michaelson, general manager of the Globe Machine & Stamping Co., Cleveland, O., was elected president at the annual meeting of the directors.

Robert F. Ohmer, sales manager of the Recording & Computing Machines Co., Dayton, O., manufacturer of Ohmer Ignition, has organized a distributing sales company with headquarters at 1 Essex Ave., Dayton, O. Automobile vehicles will be handled exclusively, the operations of the company covering southwestern Ohio.

B. F. Page, formerly manager of the Truck Department of the Maxwell Motor Sales Corp., is the Omaha supervisor for Maxwell-Chalmers.

John J. Raskob, vice-president of the General Motors Corp., is a member of the committee on organization of the Foreign Trade Financing Corporation, now being formed to further America's export trade.

C. V. Reser has been appointed division sales manager in the Texas territory for the Selden Truck Corp., Rochester, N. Y.

J. H. Samuels has resigned his connections with the tractor plant of the Moline Plow Co., and is now district representative of the Midwest Engine Co., of Indianapolis, Ind., with headquarters at St. Louis.

Clifford K. Smith, is now sales manager of the Atterbury Motor Truck Co., Philadelphia branch. Mr. Smith was formerly district sales manager for Stewart trucks in the Middle West and later district manager of the Federal Motor Truck Co., of Detroit, in Pennsylvania and the Southern states.

Harold W. Slauson, who has been manager of the motor department of Leslie's Weekly for the past nine years, has joined the Kelly-Springfield Tire Co., and is in charge of the Engineering Service Dept., at the main offices, 1710 Broadway, New York City.

Henry W. Uhl has severed his connections with the Eisemann Magneto Corp., Brooklyn, N. Y. He has been connected with the engineering staff of the corporation since October, 1916. His future plans are unknown.

Charles B. Vogt, special sales representative for the past three years at the Philadelphia branch, has been promoted to the

position of Philadelphia branch manager of the United States Tire Co.

Henry C. Weideman was re-elected president of the American Commercial Car Co., of Detroit, Mich., manufacturer of Wolverine trucks. The firm will soon begin production on a new model, it is announced.

C. J. Welsh, assistant general sales manager of the United States Tire Co., has been elected a director of the firm.

Robert S. Wilson, manager of the truck tire department of the Goodyear Tire and Rubber Co., Akron, O., has been named western division manager with headquarters in Chicago.

Norman C. Wolfe has been appointed direct representative in the Detroit district for the Moore Drop Forge Co., Springfield, Mass.

Harvey J. Woodard has resigned as vicepresident in charge of sales of the Republic Rubber Corp., Youngstown, O., and president of the Canton-Blackstone Co., of Canton, O., its affiliated subsidiary.

H. F. Woodruff, formerly general manager of the Saxon Motor Car Co., is announced as purchasing agent for the Briscoe Motor Corp., Jackson, Mich.

# Literature

Making Light of Glare is a well arranged little booklet covering the theory of headlight lenses. The work is published by C. A. Shaler Co., Waupun, Wis., manufacturer of Shaler Road Lighter lenses.

Cylinder Boring, Reaming and Grinding is the title of a new series of Machinery's Dollar Books published by the Industrial Press, 140 Lafayette St., New York City. The volume treats, very thoroughly, the cylinder subject, specifying the best tools to use and the most efficient practice to employ.

The Unfalling Source of Light is the title of some extremely clever and attractive literature mailed to 11,000 dealers by the Universal Battery Co., 3410 S. La Salle St., Chicago. The booklet, in 4 colors, describes in an interesting manner the company's Universal storage battery, laying particular emphasis on the parts service rendered by the firm.

The Modern Motor Truck, a new work by Victor W. Page, considers all types of motor trucks, industrial tractors and trailers. The book is most practical in its treatment and is marked by a simplicity which adapts itself to all members of the trade. It contains 750 illustrations, and has 1000 pages. Published by the Norman W. Henley Publishing Co., 2 West 45th St., New York City; price \$5.00.



Harry A. Grubb

The new general sales manager of the Owen Tire & Rubber Co., Cleveland, Ohio., formerly of the Oldfield Tire Co.



L. J. Kramer He has recently joined the sales force of the United States Motor Truck Co., of Cincinnati, Ohio. He was formerly of Master Truck



Don F. Whittaker Who will direct the affairs of the National Association of Motor Truck Sales Managers as executive secretary.



J. M. Dine

Has been announced as vicepresident and general manager of
the Oldfield Tire Company of
Akron, Ohio. He is a former
Firestone and Goodyear executive.

# New Agencies

The Miles Piston Ring Sales Co., a subsidiary of the North American Truck Co., Inc., has opened a distributing office at 437 5th Ave., New York City, to handle the Miles One-Piece Triple Seal Piston Ring.

The Busy Bee Motor Truck Co., 4451 Manchester Ave., St. Louis, Mo., has been appointed distributor for Schacht trucks in the St. Louis territory.

The Pennsylvania Motor Club, inc., Lancaster, Pa., has been appointed distributor for the Traffic truck in Lancaster county.

The Reed Motor Supply Co., of St. Paul, Minn., wholesaler of automobile accessories, has recently taken over the distribution of Syra-Cords in Minnesota.

Jerry Echois has opened a sales room at 220 Broad St., Gadsden, Ala. He will have the agency for the Studebaker.

Albert F. Werner Co., Chicago, will handle the territory formerly covered by the Seneca Motor Car Co., of Fostoria, O., for the distribution of Seneca cars.

The Dunker Cycle and Vulcanizing Co., 402 North Main St., Decatur, Ill., is the new distributor for Bear-Cat batteries.

The White Co. has installed a branch office at Charlotte, N. C. The White territory was heretofore handled from Atlanta, Ga.

The United Auto Stores, Inc., has opened a branch at 118 North Franklin St., Titus-

Guyer-Morris Co., with offices and service station at 1038-40 Court St., Reading, Pa., is the new distributing agency for International motor trucks, to cover Berks and adjacent counties. The company has been formed by J. Pierce Guyer, formerly branch manager of the Packard Motor Car Co. of Bethlehem, Pa., and W. C. F. Morris, who was wholesale field sales representative of the Willys-Overland Co. in New York state.

# Removals and Trade Changes

The Wickwire Spencer Steel Corp. announces new and modern quarters for district offices and warehouses at 237-243 North Sixth St., Philadelphia.

The Michigan Automotive Supply Co., of Detroit, is now stationed at its new quarters at 134 East Jefferson Ave. The company handles several lines of accessories. The Wolf Auto Supply Co., of Kansas City, Mo., accessory and automobile supply dealer, has moved to spacious quarters at 1412 Grand Ave., and is occupying a floor space 35 x 120 ft.

Bonney Forge & Tool Works, Allentown, Pa., is the new corporate title of the Bonney Vise & Tool Works, Inc., the change in name being justified by the fact that the company has greatly expanded its drop forging business.

The Arrow Tool and Manufacturing Co., 200 Cannon St., Bridgeport, Conn., is the new title of the Arrow Tool Co. There will be no change in the business other than the addition of a complete sheet metal and manufacturing department.

The Colonial Finance Corp. and the Republic Acceptance Corp., both under the same management, have moved their executive offices from Pittsburgh to New York City, and now occupy the entire 16th floor at 300 Madison Ave., corner of 41st St.

H. C. Roberts Electric Supply Co. has discontinued its line of automobile accessories at its Syracuse, N. Y., branch. The company announces, however, that the Philadelphia branch, 1101 Race St., will continue to handle automobile accessories and equipment with a greater line of replacement parts than ever before.

# New Incorporations

The New York Kelly-Springfield Motor Corp., of Manhattan, N. Y., has been formed at a \$200,000 capitalization to sell motors, engines, tires, etc.

The Atlantic Rubber Ace Co., 390 George St., New Brunswick, N. J., has been incorporated at a capital of \$100,000 to manufacture automobile tires, casings, tubes, etc.

The United Used Car Corp. has been chartered at Wilmington, Del., to deal in second-hand automobiles, tractors, etc. The company is capitalized at \$6,000,000.

The Elba Supply Co., inc., has been incorporated at Richmond, Va., for automobile accessory business with an authorized capital of \$15,000. E. L. Jones is president of the concern.

The Stewart Truck Corp., Richmond, Va., has been chartered for general automobile and accessory business with \$10,000 capital. R. G. Leftwich, of Lynchburg, is president, and John R. Williams, Jr., of Richmond, secretary.

The Martinsburg Sales Corp., of Richmond, Va., has been chartered with a maximum capital of \$75,000 for general automobile, garage and accessory business. Lacy D. Kirkmyer is president and James A. Kirkmyer, secretary.

The Lincoln T. Kaufmann Co., 150 Chambers St., New York City, has been organized to act as selling representative for manufacturers of automotive equipment. The company has been organized by Lincoln T. Kauffman and Lewis M. Schwartz.

Mel. Stringer Sales Corporation has been incorporated in Manhattan, N. Y., to sell motors, automobiles, aeroplanes, etc., with a capitalization of \$150,000. E. D. Boyer, 640 Riverside Drive, New York City, is the incorporator.

# Factory News and Capital Increases

The Jig Bushing Co., Pontiac, Mich., makers of jig bushings for use in motor car plants, will begin production on a full line of products at the new factory April 1.

The Motor Wheel Corp., of Lansing, Mich., in its first annual financial report, shows net operating profits after allowing ample provisions for depreciation and reserve, for bad debts, but before providing for Federal taxes amounting to \$877.424 55

taxes amounting to \$877,424.55.

The Jorgensen Mfg. Co., Waupaca, Wis., published a financial statement for 1920, showing total assets of \$266,397.60, which amount is included cash in hand and accounts receivable to the amount of \$131,101.-42. Liabilities to date were \$20,581.07, including a mortgage on property and unpaid dividends.

The Guide Motor Lamp Mfg. Co., of Cleveland, O., manufacturer of electric automobile lamps, announces that it has purchased the rights to the Parab-O-Light lenses from Dr. W. H. Zorger, of Champaign, Ill., the inventor. The purchase includes full rights to manufacture and sell this type of lens.

# Obituary

Joseph M. Rubinstein, 55 years old, a well known rubber manufacturer of Detroit, died at his home, March 8, after a short illness. At various times he was connected with the Goodrich and other manufacturing companies.



This Motor Bus Line Operates With Amazing Success in Direct Competition With an Electric Railway Covering Exactly the Same Route

# Wilson-Built Cabs Standard for all Trucks

THE C. R. Wilson Body Company L takes pleasure in presenting to truck manufacturers the standard "Wilson-Built Cab". Built in two sizes this standard cab can be fitted to any truck on the market.

The merits of standardization in cab construction need not be detailed. Economical manufacture; sound, proven construction and dependable source of supply make standardized cab use the modern trend in truck construction.

We are in a position to take care of your needs immediately.

Your inquiry will be promptly handled.

C. R. WILSON BODY COMPANY BAY CITY, MICH. DETROIT, MICH.



1921

# OMMER

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United	State	s and	Po	ssess	ions		-	-	-						*	-	\$2.00
Canada			-	-		-	-	-	-	-	-	-	-	-	-	-	3.00
Foreign	198	-	-	-		-	-	-		-		-	-	-	-	-	4.00
Single	Copies	3 -	-	-	-	-	•	-	-	-	-	-	-	-	~	-	40c
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Change	of Address—Subscribers desiring their address changed should the old as well as the new											give					

The Commercial Car Journal is a member of the Audit Bureau of Circulations, the Recognized Authority on Circulation Audits



1507 Kienlen Ave.

St. Louis, Mo.



# "Not a Cent for Repairs"

-transporting 148,400 gallons of petroleum products for 2½ cents a gallon

The Independent Distributing Co. of Columbus, Ohio, says: "Our 2½ ton SELDEN Truck has been in operation every day since we bought it and has not cost us a cent for repairs."

This truck is equipped with a 650-gallon tank and carries about 200 gallons of oil and kerosene on the side rail. It covers 5 country routes over all kinds of rough and muddy roads, within a radius of 18 miles of Columbus, averaging 50 miles a day.

During the time this SELDEN Truck has been in operation, 148,400 gallons of oil were transported an average distance of 15 miles at a cost of 2½ cents a gallon.

SELDEN reliable, economical service guarantees satisfaction to the user and builds permanent business for SELDEN Dealers.



"TRUCK TRANSPORTATION"
will be sent free to all
interested upon receipt of
request to Dept. CO.
SELDEN TRUCK
CORPORATION



11/2, 21/2, 31/2, 5 Ton Models\_All WORM Drive

SELDEN TRUCK CORPORATION, Rochester, N. Y., U. S. A.